IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

LOCAL 17 INTERNATIONAL ASSOC. OF BRIDGE & IRON WORKERS INS. FUND,

Plaintiff,

vs.

PHILIP MORRIS, INC, ET AL,

Defendants.

Civil Action No. 1:97CV1422

VOLUME 12

- - -

TRANSCRIPT OF JURY TRIAL HAD BEFORE THE HONORABLE JAMES S. GWIN, JUDGE OF SAID COURT, ON TUESDAY, MARCH 9, 1999 AT 8:00 O'CLOCK A.M.

- - -

APPEARANCES:

For Plaintiffs:

PATRICK J. COUGHLIN, ESQ.
MICHAEL DOWD, ESQ.
Milberg, Weiss, Bershad, Hynes
& Lerach
600 West Broadway, Suite 1800
San Diego, CA 92101

JONATHAN D. ROWE, ESQ.
Soble & Rowe, Esq.
301 E. Liberty St.
Suite 250
Ann Arbor, Mich. 48104

MICHAEL E. WITHEY, ESQ.
PAUL STRITMATTER, ESQ.
Stritmatter Kessler Whelan Withey
1200 Market Place Tower
2025 First Avenue
Seattle, WA 98121

ROGER M. ADELMAN, ESQ.
Suit 730
1100 Connecticut Avenue, N.W.
Washington, D.C. 20036

JACK LANDSKRONER, ESQ.
The Landskroner Law Firm
55 Public Square, Suite 1040
Cleveland, OH 44113



EBEN O. MCNAIR, IV, ESQ.
Schwartzwald & Rock
616 Bond Court Building
1300 East Ninth Street
Cleveland, OH 44114-1503

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

| | | |
|---|---|---|
| | | JERRY KRISTAL, ESQ. |
| | | Weitz & Luxenberg |
| | | 180 Maiden Lane |
| | | New York, NY. 10038 |
| | For Philip Morris, | BRADLEY E. LERMAN, ESQ. |
| | Inc.: | GEORGE LOMBARDI, ESQ. |
| | | Winston & Strawn |
| | | 35 West Wacker Drive |
| | | Chicago, IL 60601-9703 |
| | For Lorillard Tobacco | GARY R. LONG, ESQ. |
| | Co.: | GREGORY L. FOWLER, ESQ. |
| | | Shook, Hardy & Bacon |
| | | One Kansas City Place |
| | | 1200 Main Street |
| | | Kansas City, MO 64105-2118 |
| | For RJR Nabisco, Inc, | ROBERT C. WEBER, ESQ. |
| | R.J. Reynolds Tobacco, | PETER J. BIERSTEKER, ESQ. |
| | RJR Nabisco Holding: | JEFFREY JONES, ESQ. |
| | | Jones Day Reavis & Pogue |
| | | North Point 901 Lakeside Avenue |
| | | Cleveland, OH 44114-1190 |
| | For Brown & Williamson | DAVID BERNICK, ESQ. |
| | and BATCo: | MICHELLE H. BROWDY, ESQ. |
| | | Kirkland & Ellis |
| | | 200 East Randolph Drive |
| | | Chicago, IL 60601 |
| | Court Reporter: | Richard G. DelMonico |
| | | 404 U.S. District Court |
| | | 2 South Main Street |
| | | Akron, OH 44308 |
| | | (330) 535-2280 |

3377

THE COURT: If the jury will please be seated and I will express congratulations to you all for getting in here this morning in such a timely fashion.

Mr. Bernick.

MR. BERNICK: Good morning, doctor.

THE COURT: Doctor, you remain under oath from yesterday.

MR. BERNICK: Good morning, ladies and gentlemen.

Q. Dr. Cloninger, I know we started out briefly yesterday afternoon and started out with some of the background you have with some of your qualifications. But in the interest of picking up a little bit of where we left off, would you, in just very summary fashion,

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

remind the
jury of what your background is and the qualifications that
you have?
A. Yes, I'm a psychiatrist, medical doctor, I'm also a
professor of psychiatry, a professor of genetics, and a
professor of psychology at Washington University in St.
Louis. I see patients on a regular basis, and throughout
out my career, as a practicing psychiatrist, since 1973, I
have done extensive work in alcoholism and other aspects of
substance abuse, and have -- I'm a member of the Institute
of Medicine, the National Academy of Sciences, and a fellow
of the Society for the Advancement of Science.

3378

Q. Let's talk a little bit about your publications.
Have you had occasion during the course of your work to
publish in peer review journals in your area?
A. Yes, I have published over 250 articles in peer
review journals and about six books.
Q. Okay. Have you received any funding from the tobacco
industry, any tobacco company?
A. Never have.
Q. In connection with your scholarly work?
A. No, sir.
Q. From time to time have you testified in litigation on
behalf of one or another tobacco company?
A. I've testified in one court case in 1993, and I've
given depositions and statements in half dozen or more
cases, since then.
Q. As a psychiatrist, do you work with people who are
seeking to change the different kinds of behaviors?
A. Yes, sir, on a regular basis.
Q. And what kinds of behaviors have you been involved in
in working with people?
A. Well, one of my areas of expertise has always been
personality assessment. And so, I've always been focused
on trying to understand human motivation emotions and how
these influence people's decision making processes and the
process of changing behavior. I've applied that to the

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

3379

study of multiple substances ranging from heroin, alcohol, cocaine, cigarettes, a variety of substances. I have applied it to understanding anxiety disorders, mood disorders, multiple semantic complaints, and also I do an extensive amount of work on psychosis, schizophrenia and manic depressive disorders.

Q. Would you be talking about, today, about the experience that you gather in your different types of work with these patients?

A. Yes.

Q. And will you also be talking about the literature that has been written on these same subjects?

A. Yes.

Q. I've brought here the DSM 4, the Diagnostic and Statistical Manual of Mental Disorders. Will you also be talking about the learning that this brings to the process?

A. Yes, I will.

Q. Let's cover the topics in summary fashion which we'll be going over.

Does this chart, which is Demonstrative 7300, does this list the basic topics that you are going to be addressing?

A. Yes, sir.

Q. Let's begin with the factors which motivate smoking. Would you talk about what those factors are?

3380

A. Well, when you ask people about reasons that they are smoking, they give a variety of reasons because smoking behavior is actually very complex behavior, let's say with a variety of personal and social factors. People emphasize the fact that they smoke for a variety of reasons, that give them satisfaction and pleasure, these include the taste of cigarette smoking, the aroma, the psychological effects that cigarette smoking induces a kind of combination of calmness and alertness which people find very pleasant, also something that also facilitates social interaction.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

12 And there are a variety of kinds of ritualized
13 aspects of smoking that people come to find make them feel
14 secure and make the situation feel familiar to them. Like
15 having something in their hand or other things, that
16 smoking at a certain time and place, it gives an enjoyable
17 quality to life.
18 Q. Now, are these the factors as described by the
19 smokers themselves that you see?
20 A. Yes, sir. And also this has been the findings of
21 systematic research by a number of people over the
22 centuries, but very well described throughout this century.
23 Q. Based upon what you have learned from smokers and
24 having the contact that you have had with them and based
25 upon what you have read in the literature, have you

3381
1 developed a list of factors that you believe are
2 particularly important in understanding smoking behavior?
3 A. Yes, I have.
4 Q. Have we displayed now Demonstrative 7302, the factors
5 that you in particular have isolated as being important in
6 understanding smoking behavior?
7 A. Yes, sir.
8 Q. Okay. We have got listed here personality, family
9 smoking history, smoking in peer group and the role of
10 smoking in smokers lives.
11 Could you maybe just talk a little bit about
12 your assessment of how people come to smoke and decide to
13 continue to smoke using the kinds of factors that are
14 listed here.
15 THE COURT: Can I ask Mr. Bernick, plaintiffs
16 counsel just approach for a second.
17 MR. BERNICK: Sure.
18 (The following discussion was conducted at the
19 side bar between court and counsel, out of the hearing of
20 the jurors, as follows:)
21 THE COURT: Just as a matter, in your
22 examination, I would ask that you ask him the general
23 question and when he gives the listing then put the chart

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

up. There is some tendency for you to be leading him in his responses by putting the chart up first.

3382

MR. BERNICK: Okay.
THE COURT: The use of the chart is fine, just ask him to give the factors before you suggest the factors through the chart.
MR. BERNICK: Okay.
THE COURT: Okay.
MR. BERNICK: And after he gives the general answer I display the chart and I can ask does this accurately reflect.
THE COURT: That's fine, but it's just which comes before which.
MR. BERNICK: Okay.
(The following proceedings were conducted in open court.)
BY MR. BERNICK:
Q. Dr. Cloninger, based upon factors that you believe are important, could you just give us a flavor for how this works by describing the process of people starting to smoke and then continuing to smoke?
A. I think smoking has to be understood as a personal social process that, that we have to take into account who the person is as an individual, what their psychological profiles are, what they enjoy, what they don't enjoy. And the personality factors that are very important in the initiation of smoking, for example, include such things as

3383

a tendency to be curious, to like to explore, to experiment.
The decision to continue to smoke is also then, once there has been some experimentation, is influenced by the extent to which people find satisfaction from the relaxing effects of cigarettes. So it depends, to the extent -- it depends to some extent on the degree to which they are tense or tend to worry or need some way of copying with stress factors.
The other kinds of influences that

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

influence
smoking initiation and continuation include whether people
like parents, siblings and other peers smoke. Certainly
the initiation of smoking is very much influenced by peer
pressure, and then other aspects of this have to do then
with the use of smoking as a part of coping with life
stress, social interactions.
So it's a process that the person is making as
a choice about the way they want to conduct their life,
what style of life, and what gives their life a quality of
satisfying pleasure usual experiences.
Q. Dr. Cloninger, if you were to go back, based upon
your experience, and draw some comparisons between smoking
and hard drug use, smoking and gambling, what kinds of
comparisons would you draw between smoking and some of
those other types of behaviors?

3384
A. Well, all of these behaviors do involve repetitive
activity, but there are very fundamental differences, for
example, between hard drugs and cigarette smoking.
Particularly, the hard drugs interfere with the
ability of a person to carry out or tend to basic needs
like sleep and eating, and sex activity. And that heroin
and cocaine, alcohol can actually essentially consume a
person's interest and focus.
Whereas, this doesn't happen with cigarette
smoking. All people are able to conduct normal life,
conduct decisions in a normal way, work, and it doesn't
interfere with their marriage or occupational function.
Similarly, with gambling behavior, this also
reaches a point where people default on their work
responsibility. They don't take care of their family
needs by spending excessive money on gambling. And again,
this is something that doesn't happen with cigarette
smoking, even though they are both repetitive

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

behaviors.
So cigarette smoking is very distinct and different from these other kinds of repetitive behaviors. And people who smoke cigarettes really don't have the characteristics of the mentally ill, in most cases, unless they might happen to have some incidental psychopathology. They are able to make decisions in a normal way, they are able to tend to their work and family and recreation in a

3385

very normal way, and it doesn't interfere with such things as basic human needs of sleep and eating. It doesn't interfere with responsibility or drive people to do things that are illegal.

Q. Showing you Exhibit 7303, does this reflect some of the distinctions you have just talked with us about?

A. Yes. It would include for hard drugs the difference in primary drives I referred to, interfering with things like eating and sleeping and sexual activity and gambling. I think I described what could be then by destroying all else; it's important, but particularly with gambling, using money in excess and defaulting on responsibilities in caring for your family or doing things illegal with work and so on.

Q. Why are these social dimensions of these behaviors, that is the impact of hard drugs on the ability to conduct activities of daily living, the impact of gambling, why are those important differences to you in assessing the significance of smoking as a behavior versus these other behaviors. Why does social -- the ability to conduct every day life make a difference?

A. Well, it really gets at the basic ability of a person to evaluate the situation they are in and to make responsible decisions.

A cigarette smoker is someone who does not have

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

3386

any interference with their ability to make mature, responsible judgments. They are able to recognize the reality of the situation around them and to behave in a responsible fashion; whereas these other behaviors often involve very gross impairment of psychological functions and decision making ability.

Q. There is one other item I think appeared at the bottom of the chart that you hadn't mentioned. Could you just briefly touch on the significance of details?

A. Well, the basic importance here then is the interference with lifestyle or the intrusion on lifestyle. The shaping of lifestyle is really, in a cigarette smoker, one that has to do with the details of choice about lifestyle.

In other words, if you might like to smoke at a certain time, you might like to smoke a certain kind of cigarette, you might like to have the cigarettes in a soft pack or hard pack, depending on personality preferences these are really choices of lifestyle, these are details that distinguish one person from another in style, and they are not defaults or defects in the way that you deal with the basic reality of your life.

Q. Do those kinds of details have any importance in hard drug use?

A. Very little. If you stop and think for a minute, for

3387

example, of someone who was a heroin addict or a alcohol dependent person with impending withdrawal symptoms, they are not going to be very concerned about what the form, whether the substance is in one form or another, they just want to get it for the pharmacological effect.

Whereas, what is being attended to by the cigarette smoker is more a matter of lifestyle. And the best ways that they are comfortable gratifying the way

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

9 they want to conduct their day, but they are not things
10 that involve just a drive purely by the pharmacology of a
11 drug.
12 Q. There has been a lot of discussion in this case about
13 nicotine and it's pharmacological effects. Do you have an
14 opinion, Dr. Cloninger, on whether nicotine alone can
15 explain spoking behavior?
16 A. I do.
17 Q. And what opinion do you have on that subject?
18 A. I think that cigarette smoking is a much more complex
19 personal and social behavior, and that the influence of
20 nicotine, though important, is only part of the picture.
21 And that in order to really understand cigarette smoking we
22 have to look at the level of the person, we have to
23 understand their psychology, we have to understand their
24 social context, and that this is a behavior in which people
25 are alert and making responsible choices so that they are

3388
1 not in fact driven or controlled simply by pharmacological
2 effects of a substance or drug.
3 Q. Is there specific research that you believe is
4 important in he Lewis dating, what role nicotine does or
5 does not play in smoking behavior?
6 A. Absolutely.
7 Q. What kinds of research regarding nicotine do you find
8 to be of significance in talking about the impact that it
9 has on smoking behavior?
10 A. Well, there have been a large number of kinds of
11 studies looking at the effect of nicotine levels. For
12 example, at the time that someone makes a decision to try
13 to stop, there has been examination of the roles of
14 nicotine in relation to the severity of withdrawal, there
15 has been extensive research on what use nicotine
16 replacement has on getting people to stop successfully, and
17 what effect it has on the desire to continue to smoke.
18 Q. Showing you Exhibit 7304. Are these some of

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

the
19 particular factors that you have recited and that
appear in
20 the literature that bear upon your opinions
concerning the
21 role of nicotine?
22 A. Yes, that's a fair summary.
23 Q. Let's just talk about a couple of them and
go to the
24 literature on a couple. We won't have to go
through the
25 whole list.

3389
1 Let's focus, for example, on whether
the
2 content of cigarettes has been greatly reduced
over the
3 years. What do you know by the nicotine content
of
4 cigarettes has been greatly reduced over the
years?
5 A. Well, according to the Surgeon General's
report, it
6 has been shown that the content of cigarettes with
nicotine
7 and tar has decreased since 1940s and '50's to the
present
8 day in a rather steady fashion, so that the level
of
9 nicotine is not as high as it used to be, and yet
people
10 continue to smoke regardless of that level.
11 Q. Okay. And what significance does that have
to you in
12 terms of the significance of nicotine for smoking
behavior?
13 A. Well, if it was just the content of the drug
that was
14 determining people's decision to smoke or not to
smoke,
15 then it would be the higher level would be what
would drive
16 people to smoke, and a lower level would make it
less
17 enticing.
18 The fact is, that people have
continued to
19 smoke regardless of the level, and they have
individual
20 choices and preferences about the level and type
of
21 cigarette that they smoke.
22 Q. Let's talk about whether the level of
nicotine
23 consumed is predictive of whether people will be
able to
24 quit. That is more nicotine, more difficult, less
nicotine
25 less difficult. Is there research on that
subject?

3390

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

A. Yes, it's been very carefully studied in many studies now that show that if you measure the level of nicotine or you measure the level of the principal metabolite of nicotine, such as cotinine, then you can check to see whether that level, which is a measure of the extent to which people have -- are maintaining nicotine in their body by smoking, whether that influences their success in stopping. And what's consistently found, it does not predict the ability to quit smoking at all.

Q. What about the number of cigarettes that are smoked?

A. The number of cigarettes may not be quite as good a measure of the level of nicotine to get, because people can smoke cigarettes in different ways. But still the number of cigarettes doesn't predict it, the level of nicotine doesn't predict it, the level of cotinine doesn't predict it, severity of withdrawal symptoms people may get does not predict whether people are able to stop smoking successfully when they decide to.

Q. I put up on the screen GK 74. Is this an article that has been published on the subject?

A. This is a nice article by Michael Fiore that has compared the success in smoking of people who quit on their own. And those that go through smoking cessation programs -- and it indicates that -- the highlighted line there says, daily cigarette consumption did not predict



whether people would succeed or fail during their attempts to quit smoking. And further, that can be qualified to indicate that the number of cigarettes and the nicotine level doesn't predict.

Q. Okay. Is that consistent or inconsistent with your own views on the subject?

A. Oh, completely consistent.

Q. I'll show you one more. Now is this an article by Dr. Hill dealing with predictors of quitting?

A. Yes, it is.

Q. And if we go to the next page, again, is

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

there
12 specific discussion of whether levels of nicotine exposure
13 are predictive of whether people can quit?
14 A. This shows another aspect of it in that you could
15 compute essentially how much people have smoked in the past
16 to see sort what the load or inertia of past smoking would
17 be by computing pack years; which is the product of the
18 number of packs of cigarettes you smoked per day times the
19 number of years you smoked. And that way you can compute
20 essentially the total amount of cigarettes that have been
21 used, or you can compute the nicotine dose or the tar
22 content in some of these things that have been used entered
23 into multiple regression equations or other kind of
24 structural equation model to see whether it is possible to
25 account for quitting ability. And in fact, the measures of

3392
1 extent of past smoking or current levels of smoking are not
2 predictors of relapse rates or quitting rates.
3 Q. For the record, the Fiore article was GK 74 and the
4 Hill article was GK 100076, let's pick up one more article.
5 What about the question of withdrawal symptoms.
6 Are withdrawal symptoms, that is greater withdrawal versus
7 lesser withdrawal, is that a predictor of whether people
8 will be successful or not?
9 A. You can measure whether people have had withdrawal in
10 the past, and in some, also in studies where people are
11 doing a cessation trial, you can measure whether people
12 have withdrawal symptoms when they do quit during the
13 course of the treatment, and neither past history of
14 withdrawal symptom severity or the severity of withdrawal
15 during the process of a quitting attempt are predictive of
16 people's succeed when you measure that at 6 or 8 weeks or
17 three months or a year. The severity of withdrawal is not
18 a predictor of success in quitting smoking.

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

Q. Showing you GK 00016, which is an article by Ken?
Ford.
Are you familiar with this particular study?
A. Yes, this is a 1994 JAMA or Journal of the American
Medical Association article, and it has a very good summary
of predictors of smoking, success in quitting smoking and
people who are using the patch and people who are using a

3393

patch.
Q. It says the intratreatment markers exam. Intratreatment would be things that you are looking to in
the course of the treatment?
A. Yes, within the treatment program, you see when
people do stop as part of the quit attempt, their severity
of withdrawal in response to that, or in this case, this
study they gave people nicotine patches in some cases and
in other individuals they didn't give it, so they are able
to examine the level of nicotine replacement.
And so they had two measures during the course
of treatment to see what would be predictive, and they had
already shown that withdrawal. I'm sorry, they had
already shown that measures of dependence and nicotine
levels and so on, did not predict those were pretreatment
variables. And then they examined the severity withdrawal
and the nicotine replacement level and they found those
also did not consistently predict quit attempts.
Q. It says severe withdrawal and nicotine replacement
levels were not consistently predictive of cessation
success.
Is that consistent or not consistent with what
you are saying here?
A. Exactly consistent.
Q. Let's talk about the next topic you had on your list,

3394

which is the cigarette addiction label. And I'm going to
pose a series of questions with one of our charts here and

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

ask you to answer them.
First, the Surgeon General report in 1988
concluded that smoking was an addictive behavior?
A. It used that label, yes.
Q. Does the fact that the Surgeon General first made
that pronouncement in 1988, does that indicate to you,
based upon your knowledge of the literature, that the
addictive properties of nicotine were somehow a secret
before the Surgeon General's report was issued.
A. It's been known for centuries that it is difficult to
quit cigarette smoking. In fact, in the 19 -- whether you
should use the word addiction or not I think is something
that is arguable in the past and now. But the import, I
think, is that it's always been recognized that it's hard
to quit smoking cigarettes.
And in the 1940's, there were studies that
showed that injections of nicotine and/or something that
would people would find pleasurable, and that people would
want to continue doing repeatedly. Also there was an
article in 1963, even before the '64 Surgeon General's
report, that classified it as a habit. And in '63 in the
American Journal of Psychiatry, Dr. Kanapp and others were
describing very close similarities of cigarette smoking to

3395

drugs that would be properly considered addicting, and
raising the question of whether this was an addiction,
whether that was an appropriate level or not.
Q. Let's turn to the second item. Does the fact that
the addiction label has now been applied, does that mean
there is no difference between nicotine and hard drugs?
A. No, the word addiction now has really come to only
mean that some people do some thing repeatedly. It doesn't
have, as it's being used, it really doesn't have any
specific boundaries and definitions so that just about
everything that is repetitive could be considered

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

addicting. It's been used in that way. But your question again was exactly what, I'm not sure?
Q. Does the fact that the addiction label has now been used, does that mean there is no longer a difference between nicotine and hard drugs?
A. Oh, I see the point.
No, there have been definitions of addictions in the past that were more specific, I think more useful, that would make a distinction between cigarette smoking and hard drugs. But now people are using the word addiction in a much broader sense, and so anything from gambling to hard drugs or use of potato chips, or whatever, could be considered an addicting behavior, and these could all be lumped together.

3396

But still, the fact remains, regardless of the label, that there are important functional differences in people who smoke cigarettes than people who use hard drugs. That doesn't go away no matter what you call it.
Q. Okay. There has been testimony in this case concerning some distinctions that were made between smoking and hard drugs?
THE COURT: Let me just, as I said before, in terms of the procedure --
MR. BERNICK: I intended to use this for a somewhat different purpose, your Honor.
THE COURT: I think, again, it's got the same problem that we smoke spoke about before.
MR. BERNICK: Okay. Let's go back to the --
Q. Are you familiar, Dr. Cloninger, with the distinctions that were made between smoking and hard drug use back in the 1964 Surgeon General's report?
A. Yes.
Q. And were there some fundamental differences that were drawn there?
A. Yes, that's the point I referred to earlier, about their being definitions of addictions that I think were more distinctive and more clearly for cigarette smokers and hard drugs that need to be borne in mind,

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

regardless of
what labels you use.

3397

Q. And what were some of the addictions highlighted in
the 1964 report?
A. The fundamental differences in the definition of the
World Health Organization were that an addiction involves
something, intoxication, chronic and repeated, that is
interfering with people's ability to make judgments in a
responsible fashion, to be alert, and to be aware of what's
really going on around them.
Cigarette smoking is not intoxicating, whereas
drugs of abuse, like alcohol and heroin and so on, and
cocaine, all other substances of that are called dependent
producing, are intoxicating.
Cigarette smoking, nicotine, are not intoxicants.
Q. What were some of the other criteria or distinctions
that were use the in 64 report?
A. The other very important distinction, I think, that
Surgeon General's report, World Health Organization
definition is an addiction of intoxication. An addicting
substance is one that leads to tolerance through the
pleasurable effects of the substance. So people have to
increase the dose and keep increasing it in order to use it
in order to maintain the same effects.
For example, all things like alcohol and heroin
are things that you steadily have to increase in order to

3398

get a pleasurable effect; whereas, with cigarette smoking
people go for many years, once they have gotten adjusted
to the adverse effects of it, and they can smoke the same
number of cigarettes with the same amount of pleasure for
decades.
Another important difference has to do with the
severity of withdrawal and the type of withdrawal.
Substances like alcohol and heroin have a very

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

consistent
pattern of physiological withdrawal, with specific signs and symptoms that are very consistent, very reproduceable, very reliable, and they occur in essentially everybody who takes in enough of that substance for a long enough period of time.

In contrast, with cigarette smoking, no matter how much people smoke and for how long they smoke, when they stop, they may have a period of distress with anxiety and so on, and there may be some signs where they return to their baseline levels of things like their metabolic rate and their heart rate and so on. But theirs no consistent pattern of withdrawal in terms of physiology or symptoms. Most cigarette smokers don't in fact have many withdrawal symptoms when they stop.

Another very important difference between addiction and habits are -- or between hard drugs and cigarette smoking, has to do with social deviance. In



that when you think of what an addict is, what it calls to mind as an image in the minds of most psychiatrists, and I think in the popular public, is that someone who's basically all consumed by that substance, and whatever they do is totally dominated by getting it and filling that need. So that they are willing to steal and beg and borrow and whatever it takes to get that substance.

And so addiction has always been associated with extreme social deviance. And it only takes a moments thought to realize that people who are cigarette smokers don't show this kind of deviance, in fact, are often model responsible citizens.

Q. I want to show you what we have got as Demonstrative 7307, and ask you whether that lists some of the differences that you have just talked about based upon the

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

'64 report?
A. Yes. Specifically it indicates that cigarette smoking is not associated with intoxication.
Second, that there is no consistent or specific physiological withdrawal from nicotine, and that there is no tolerance to the euphoric or the pleasant effects of cigarette smoking.
Q. Now these were mentioned in the '64 report?
A. Yes, those are requirements for what it means to have an addiction, according to the World Health Organization

3400

definition of addiction at that time.
Q. Now, today, does the science provide support, or does it not provide support, for some of the same differences that were indicated in 1964?
A. What the science shows is that these facts are still true, regardless of what label you choose to pick.
Q. I want to ask you, turn to another aspect of the comparison that you were drawing.
Let me get it back on the screen.
We have talked about whether there was a secret before '88; we talked about this difference. Let's talk about beneficial to smokers. During the course of your work and working with your patients, do you or do you not focus on what's of benefit to your patients who are smokers?
A. Yes. In order to really understand cigarette smoking I think you have to the get a person to think about both risk and benefits, and to have that clearly in mind. And what cigarette smokers emphasize is there are real benefits to them of smoking. It not only gives satisfaction and pleasure in a general sense, but people specifically point to the fact that it's relaxing, and it also allows them to be more alert and focused. So that it has very useful benefits in terms of mood regulation, and allowing them to be more vigilant, to react in a more focused and alert

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

3401

manner, or as well as at the same time that they are alert, they are calm.

Q. Now, what if we talk about the use of the word addiction. In talking about smoking as an addiction, do you have an opinion about whether that has beneficial therapeutic value to smokers to talk about addiction?

A. Yes. The use of the label of addiction does not have any benefit to a cigarette smoker. In fact, one of the reasons that the World Health Organization abandoned the use of the term addiction, and the American Psychiatric Association abandoned it, if you use the word addiction sometimes people get the wrong idea; that it means loss of control and that someone can't stop if they are addicted to smoking or to some other substance.

And in fact, the word addiction does not mean loss of control. People who are smoking cigarettes regularly have the capacity to stop, and they quit all the time. And so it's possible to. It's very misleading and it interferes with therapy if you suggest to someone that they are an addict, because they then they may tend to use that as a justification for not making the effort to make up their mind to stop smoking. So it is counter-therapeutic.

Q. Now, if we go to the DSM, the Diagnostic and Statistical Manual of Mental Disorders I think we made

3402

reference to this briefly?

A. Yes.

Q. But is there any more authoritative document or source in diagnosing disorders or conditions within your field?

A. The DSM is actually sometimes called the bible of psychiatry, because it is an official requirement that all classifications and diagnoses have to be made using these criteria and the ways of labeling things. And so this is

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

really considered a very authoritative source about what
the diagnostic labels should be and what they mean and what
they don't mean.
Q. If we go to this document, would we find smoking is
termed to be an addiction?
A. No. The word addiction is not officially sanctioned
in any official classification system in the world, and
certainly not in the United States.
Q. Does the DSM manual specifically address this last
question, which is loss of control?
A. Yes. There is a specific warning to all clinicians,
and this should apply not only to psychiatrist but people
practicing medicine throughout the United States, that the
label of substance dependence or any other label has no
implications whatsoever for whether a person is responsible
for their behavior or whether they have control over their



behavior. I think there is a highlighted quote that
identified that, makes this very clear. I can't read it
from here.
Q. I'll blow it up. This is out of GK 000298.
Could you just read that to us, Dr. Cloninger
and comment on the significance of that in terms of this
issue of loss of control?
A. Well, this is a very important warning, because the
American Board, the American Psychiatric Association did
not want improper use of its diagnostic labels, which are
ways of describing people, but, and it says specifically,
moreover, the fact that an individual's presentation meets
the criteria for a DSM 4 diagnosis does not carry any
necessary implication regarding the individual's degree of
control over the behaviors that may be associated with the
disorder.
Even when diminished control over one's
behavior is a feature of the disorder, having the
diagnosis in itself does not demonstrate that a particular

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

individual is or was unable to control his behavior, his or her behavior at a particular time.
Q. Are you aware of any authoritative statement that has ever been issued in connection with these diagnostic criteria, or the American Psychiatric Association, that is in conflict with the warning or the statement that you have

3404
just read here?
A. Oh, I can respond to that very well, because I was part of the consultant panel that developed the Diagnostic and Statistical Manual Number 3, Number 3R, and Number 4. And that was in 1980, '87 and '94. And we have never ever put any kind of suggestion, or we have actually made an effort not to mislead anyone into thinking that a diagnostic label allows you to draw any conclusion about loss of control.
Q. I want to show you the answer that has been provided in this case by the plaintiffs on the term addiction. And I'll blow it up a little bit here.
Do you see where it says addiction means loss of control of drug use, and we are going to go on to finish the rest of the sentence, but just let's begin with that first phrase. Is that or is that not consistent with what you have told us about the American Psychiatric Association?
A. Well, it says something very peculiar. Addiction means loss of control drug use, and implying if one wants to stop, it is difficult to do so. Logically there is a problem there in that it's trying to equate difficulty doing something with loss of the ability to do so. And of course those are two very different things qualitatively, but specifically then, what this implication is that using

3405
the word addiction, which sometimes does mislead people into thinking about loss of control, is not

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

considered
appropriate by the American Psychiatric Association.
That's why we use the term dependence and we refer only to
difficulty, and we recognize that that does not imply a
loss of control.
So there are several things wrong with that. I
think logically it's almost internally inconsistent;
secondly it is using a term that is not sanctioned by any
official panel of addiction; and second, it's using a
diagnosis. If this were a diagnosis to imply that the
diagnosis can tell you whether there is loss of control,
and it's obviously not, not a useful or an accurate
definition by modern standards of diagnosis.
Q. I just want to focus on the second part of it, which
is if one wants to stop it is difficult to do so, just that
second part of that. Is that at all controversial?
A. No, I think that's been something that has been
recognized for centuries.
Q. Let's talk then about the process of quitting itself,
which I think is our last or second to last topic. Our
last significance topic. Are there some basic facts about
quitting and deciding not to smoke that are important in
your view in understanding the quitting process?
A. Yes, sir.

3406

Would you like me to give some of those?
Q. Yes.
A. The most important thing to understand about the
quitting process with cigarettes is that this is a personal
decision, this is something that a person has to make up
their mind about. No one can make you do it or not make
you do it very successfully. It's the -- all the studies
that have looked at the process of quitting and quitting
success indicate that far and away the most important
factor is the person's firmness of commitment in making up

http://legacy.library.ucsf.edu/tid/ovw05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

their mind that they want to stop.
If someone thinks maybe I want to stop in the future, or maybe I want to stop and maybe I don't, and so on. They, if they have mixed feelings or ambivalent feelings, then they have much less success then if they make up their mind: This is it, I'm putting it away. I'm not going to do it anymore. They have a much greater success.
So the self-efficacy drives the quitting. What self-efficacy means, the person has the confidence, they have made up their mind this is what they want to do, and that is what is predictive of success in quitting.
So it's really a matter of a personal decision.
And all other variables, as I mentioned earlier, about nicotine level or nicotine replacement, really have very

3407

marginal impact on people's success or decision to quit or their tendency to relapse.
Q. People are -- there has already been testimony about the fact that people can quit on their own. Is that again consistent with your own experience?
A. Oh, no. No, it's a very prominent factor, yes.
Q. What about the success rates of people who quit on their own versus people who are part of a formal cessation programs?
A. Self-quitters, people who decide on their own, actually represent the bulk of people who do stop quitting, and their success rate is much higher than those who have mixed feelings and feel they need help and go into treatment programs. The success rates are around 50 percent for people who decide to quit on their own, and they are half of that or less in people who go into cessation programs.
Q. There has been testimony about the fact that people say, many people say they don't want to quit. Has research

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

been done on the reliability of a set of reports on wanting to quit?
A. Yes, there is some nice work by Koslowski, there has been extensive work with DeClamenti and Prochasta that look at the stages of committing to quitting. And all of this work indicates there are many people who indicate a vague

3408

desire sometime maybe to quit, and that that is not predictive of success, or this doesn't indicate any readiness to quit.
And there is also, especially now that people are in a way harassed if they are a smoker, the people tend to be much less candid about whether they really want to quit. And they will say yes, I do, but Koslowski makes this point very clear in his work, that if fact many people exaggerate their readiness to quit in order to just get people off their backs.
Q. I've shown you 7306. Does this cover some of the basic facts you have now reviewed for us regarding the quitting process?
A. Self-efficacy and motivation are most important, that's what I indicated, are the predominant predictors of higher success rates on self quitting.
That's what I mentioned, self-efficacy, motivation, and self report; the desire to quit can be unreliable.
Yes, those are the three points.
Q. In terms of published literature on the self-efficacy, we have an exhibit here which is GK 10076 which I think has already been shown once to the jury. Does this contain commentary on the significance of it?
A. This is the Holly Hill article, and it does indicate

3409

psychosocial factors that are the dominant predictors in people's among the psychosocial factors, both self-efficacy -- and they are referring to the DeClementi

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

4 and Prochaska work I mentioned earlier. The desire to work
5 and change has played an important role in smoking
6 cessation.
7 That's actually a very conservative statement.
8 Q. And if we then went back to the question of, I think
9 you mentioned that the issue of whether people who report
10 on their desire to quit whether that is reliable or not,
11 you mentioned?
12 A. Koslowski article.
13 Q. That's Exhibit GK 000112. Is this the Koslowski
14 article?
15 A. Yes, that's it.
16 Q. And this has been done, this specific research, on
17 the question of whether the self-reports of wanting to quit
18 are reliable?
19 A. Right. I'm not sure I like his title so much, but
20 filtering smoker's hot air is a little bit tongue in cheek,
21 but.
22 Q. Is this recognized as authoritative document and
23 study concerning this?
24 A. Yes, it's in a prominent medical journal, it's peer
25 reviewed.

3410
1 Q. In any given year or at any given time what is
2 roughly the percentage of current smokers who seriously
3 decide they want to make a serious quit?
4 A. What's the percentage who really want to make a
5 serious quit attempt? That proportion would be closer to,
6 would be about 30 percent of people who indicate that
7 they are actually ready to do something about quitting now.
8 Q. Let's talk about the last topic that is on your list,
9 which is, do tobacco industry statements play a significant
10 role in the decisions of smokers to quit?
11 In order to address that I would like to have
12 you reflect, first of all, on your own personal experience
13 in your clinical practice.
14 In your view, in your experience in working
15 with smokers who want to quit or are talking with you

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

16 about their smoking behavior, do you have any -- have you
17 formed any view on whether tobacco industry statements
18 play any significant role in their decision making to
19 quit?
20 A. Yes, I have. I've talked to a lot of patients about
21 this and I have a clear picture of that.
22 Q. Can you tell us what your views are based upon your
23 own -- let me just -- can you -- your personal clinical
24 practice goes back how many years?
25 A. I've been a psychiatrist since 1970. I was Board

3411
1 certified in '75.
2 Q. And again, based upon that experience, could you
3 address this last issue?
4 A. Yes. It's, it's very clear that cigarette smokers
5 start usually in adolescence, associated with peer pressure
6 and experimentation, and so within a few years they have
7 had direct personal experience themselves. And my
8 experience is that people are not relying on second hand
9 reports about people in order to know something about the
10 cigarette habit and what they like about it and what they
11 don't like about it.
12 There is, there is widespread knowledge about
13 the risk and the benefits of cigarette smoking, and this
14 is something that people don't rely, as I say, on
15 advertising or a scientific reports. This is something
16 they know is a part of their own lifestyle and their
17 friends and family members that they have observed
18 directly.
19 So I think there is a very minimal and marginal
20 impact of formal information from the tobacco companies
21 that people are paying attention to whatever information
22 is available to them in the media and other sources, but
23 they are weighing it as a part of their own direct
24 experience.
25 Q. Going beyond your own personal experience and your

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3412

clinical practice, are you familiar with the report of the Surgeon General in 1989 which reviewed the prior 25 years of the anti-smoking campaign?

A. Yes, I know I've read that.

Q. Does this report, 25 years, 1989, would be reviewing back to the first Surgeon General's report in 1964?

A. Correct.

Q. In this document, this report by the Surgeon General, is there specific discussion on the steps that have been undertaken to try to get people to quit?

A. Yes, there is a very nice review by the Surgeon General that indicates that that reviews all the efforts that have been made to educate the public, in terms of the initial pressure releases and discussions about the 1964 report, about warning labels, about stop smoking campaigns that were initiated by various groups, the American Lung Association, American Cancer Association and it weighs the impact of that on smoking rights.

Q. Does the Surgeon General in the 1989 report, in reflecting back, assess what factors have had an impact on people quitting or continuing to smoke?

A. Yes, that was a major focus in one of their chapters.

Q. Is there any conclusion that is reached in the 1989 Surgeon General's report, based upon that review, that tobacco industry statements regarding the risk of smoking

3413

have played any significant role in the decision of smokers to quit or to continue smoking?

A. Yes, they do express an opinion about that.

Q. Is there any conclusion that is reached that says tobacco industry statements in fact have played a significant role?

A. No, they don't. In fact, they specifically indicate that the impact was related to the education efforts of the public health communities in these societies, like the American Cancer Society and the impact of advertising as

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

discussed, but it's not found to be something about which any conclusions can be drawn.

MR. BERNICK: I have nothing further, your Honor.

THE COURT: Thank you, cross examination.

CROSS EXAMINATION

BY MR. ADELMAN:

Q. Good morning doctor. How are you?

A. Good morning.

Q. Let me ask you a few questions about your practice that you have described here.

Your duties include teaching, correct?

A. Correct.

Q. And how much of your time do you devote to teaching at this point?

3414

A. 15 to 20 percent.

Q. How much of your time do you devotes to research?

A. About 50 percent, 60 percent.

Q. Okay. And how much of your time do you devote to your clinical practice?

A. About 15 percent.

Q. 15 percent?

A. Yes, sir.

Q. And is that true over the last let's say --

A. Actually, I guess, 15 percent has been what it's been over the last decade or so, but I would say in the last 3, 4 years, that it's increased about 20 percent.

Q. Okay. But it's a fairly small part of what you do every day and every week?

A. Well, I don't think of it that way because it's a, you see, my research is clinical research. And what I do is to, I've always maintained a despite working extensively as a researcher and as a teacher, when I'm teaching I'm supervising residents, patients who are being presented to me, I'm discussing their management.

When I'm doing research I'm doing research about clinical activities. So the reason that I've always enjoyed and maintained my interviewing and treating patients is that I find that my research and my teaching actually is guided by my clinical practice. And so I do

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

3415

all of these in an integrated fashion, so I'm always thinking about patients and patient care.

Q. Okay. You practice as a psychiatrist, right?

A. Yes, sir.

Q. And you teach as a psychiatrist?

A. Yes, sir.

Q. In other words, you teach matters of psychiatry to others?

A. Yes.

Q. And in this clinical practice do you see these patients as psychiatric patients?

A. Yes.

Q. They are coming to you for their psychiatric needs, correct?

A. Yes, sir.

Q. And how many patients you say you see, even on that basis, in the course of a week?

A. Average number of patients a week, let's see if I can just think of the last month or two. I see patients about 15 hours a week.

Q. I said numbers, sir?

A. I see them an hour each. I'm one of those old doctors that still believes psychiatrists still need to see a patient for an hour in order to do a good job.

Q. How many of those patients are coming to you

3416

specifically for smoking problems?

A. Very few people come to me for smoking alone.

Q. Very few. How many?

A. It would occur occasionally, but it would be almost, it would be rare, I would say less than five percent of my patients over the years.

Q. Less than five percent of your patients over the years have come to you for smoking problems?

A. Alone.

Q. Alone?

A. I thought that was your question.

Q. Indeed.

A. Because most people, a lot of people smoke in addition, and I take that as part of their overall condition. But a few people come to me only for smoking cessation.

Q. And do you run a smoking cessation program now, sir?

A. No, I have advised some, but I don't run any

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

now.
Q. Have you ever done that?
A. I haven't run any. I've only advised them on
principles and methods.
Q. By them, other doctors?
A. Yes.
Q. You don't participate in that like Dr. Parran does?
A. No.

3417
Q. You know Dr. Parran, don't you?
A. I don't know him personally. I have read an article
by him and his expert reports.
Q. So we can say that over the 20 -- well, we are
getting to 29 years, sir, that you have practiced, you have
rarely seen a patient who came to you particularly with a
problem about smoking, is that correct?
A. Well, you put two parts. I mean, certainly I've also
worked with friends, and other people, but in my patient
care work, they have usually not come to me for smoking
alone, that's correct.
Q. The fact of the matter is, smoking treatment is not
your specialty, is it?
A. It's not my specialty or subspecialty, it is a part
of substance dependence in general, including cigarettes.
Smoking is a part of psychiatry, and I think it's an
important part, particularly of mine, because I've been
especially interested in the whole process of the use of
substances as an influence in motivative behavior. But it
is not what I call, it's not the only thing I do. I see
that as a part of human behavior.
Q. If you will bear with me and answer my question, sir,
if you can?
A. I'm sorry, I was trying to, I'm sorry.
Q. Smoking is not a specialty that you engage in,

3418
smoking treatment is not one of your specialties, is it?
A. Well, I wouldn't really agree with what you are
saying, because I think that substance dependence is part
of psychiatry, and I'm a psychiatrist. And when I

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

see my
patients I see the whole person. And if they are a smoker
I deal with their smoking. That's what I've always done.
Q. But you have rarely seen a patient who has come to
you specifically for smoking problems, correct?
A. Correct.
Q. Now, the information, some of the information you
conveyed in your testimony here has been in the form of
opinions, correct?
A. Correct.
Q. And I take it now that we have gone through your
practice, it's fair to say that whatever information you
have to support those opinions is not from your private
practice but from information you have gathered from other
sources, correct?
A. It is a combination from my private practice and from
my research.
Q. For instance?
A. And reading the literature.
Q. Surely you made statements a moment ago to counsel
about the percentage of people that really want to quit?
A. Yes, sir.

3419
Q. That you got from other sources, your own patients,
correct?
A. I've got that information from both my private
practice, my reading the literature, and also I've,
specifically I know that firsthand from my research, and
that I have done surveys, they measure the readiness of
people to quit smoking.
Q. When you do these surveys you yourself don't
interview the people surveyed, do you?
A. In a lot of the survey work what we do is send out
questionnaires.
Q. My point is, sir, if you will answer it please, you
yourself don't interview these people, do you?
A. In the surveys that I'm talking about, the survey is
a self-report questionnaire where we write out the
questions.
THE COURT: Try to just answer if you have.
Mr. Bernick will have an opportunity to follow

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

up.
THE WITNESS: I'm sorry, your Honor.
THE COURT: Try to answer his question directly and Mr. Bernick can following up if he thinks he needs a fuller explanation.
Q. Doctor, I think the question is simple. In these surveys you yourself don't personally interview the individual survey?

3420
A. I don't interview them and no one else does.
Q. Now, when you, on occasion, this rare occasion when a person comes to you with a smoking problem, you do as a doctor and as a psychiatrist, attempt to satisfy him?
MR. BERNICK: Objection to the characterization of counsel. It is contrary to his testimony.
THE COURT: I'll sustain it. Rephrase the question.
BY MR. ADELMAN:
Q. On the rare occasion when people come to see you for smoking problems you, as a doctor and as a psychiatrist, attempt to help them?
A. Right, correct.
Q. Have you had occasion to prescribe medications for anyone who has come to you with a smoking problem, for that smoking problem?
A. Yes.
Q. Have you directed people of this sort to go into smoking cessation programs?
A. I have certainly discussed that possibility with them.
Q. Maybe I should put a better question.
Have you recommended smoking cessation to any of these patients?
A. I have.

3421
Q. Have you also told them that smoking is dangerous to their health?
A. Consistently.
Q. Because you believe that, right?
A. Yes.
Q. And it is, correct?
A. I believe so. That's my opinion, personal opinion.
Q. Now, you have mentioned a number of

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

articles, I
believe it was 250, in the neighborhood of that, that you have written over the years?
A. Yes, sir.
Q. None of those articles has, as it's major theme, tobacco, correct?
A. Correct.
Q. Your areas of interest are in, first of all, in psychiatry, correct?
A. Yes, sir.
Q. In genetics?
A. Yes, sir.
Q. And other matters relating to psychiatry, is that true?
A. Yes.
Q. When was it that you first testified on behalf of the tobacco companies in tobacco litigation?
A. 1993, I was involved in a court case.

3422
Q. Okay. Without naming the cases, can you tell us how many other occasions you have testified to for the tobacco companies, either in litigation, at trial, or in litigation through depositions?
A. This is my second trial testimony, the first was the '93 case that I mentioned. And I don't know the exact number of other times when I've given depositions or whatever, it's but it's probably between 6 and 12. I don't know the exact number.
Q. Okay. And on each of those occasions you have testified in a similar fashion here regarding your views of addiction?
A. Yes, sir.
Q. Let me finish my question. But I think you will answer it the same way regarding your views of addiction and smoking, correct?
A. Correct.
Q. You have given the same testimony?
A. Yes, sir.
Q. Now, you also have indicated on your CV that you are the director of something called the Center for Psychobiology and Personality over there at Washington University in St. Louis?
A. That's correct.
Q. And that position began in March of 1994?

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

3423

A. Yes, sir.
Q. Somewhat after, shortly after you testified in your first tobacco case, correct?
A. Yes, sir.
Q. How many employees does the Center for Psychobiology and Personality have now?
A. Let's see, six.
Q. Do they all work under you?
A. Yes, sir.
Q. How is it funded?
A. We have funding from an endowed professorship that supports it substantially. I also have a National Institute of Mental Health grant for -- that actually is most of the funding, so it's mostly from endowment, the Walsh Renouard professorship, and the second from an annual grant of over a million dollars from the National Institute of Health.
Q. Any other funding support?
A. Consultations that I do, and also --
Q. Well, are they --
A. -- contribute to that.
Q. Any of those tobacco industry consultations?
A. Yes, sir.
Q. For some of these defendant corporations here in this case?

3424

A. Yes, sir.
Q. And --
A. My time basically is compensated as a consultant so those funds would go into the center.
Q. Now this is aside and apart from your testimony for the tobacco companies, correct?
A. I'm not sure I follow you.
Q. Please. I'm sorry.
This consultation that you do is aside and apart from your testimony in the various cases involving tobacco for the tobacco companies?
A. I'm only paid for the time I spend in doing consultation, so there is no subsidy, if that's what you mean, from the tobacco companies to the center. It's only a question of my compensation for time in this case, as it would be in any other kind of case.
Q. And --
A. Or clinical consultations for a pharmaceutical

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

company or whatever.
Q. And those payments from the tobacco companies, have they been made from 1993 to the present time to this center?
A. There have been some, yes, sir.
Q. You say quitting is a matter of personal decision, correct?

3425

A. Yes, sir.
Q. So you take the view that a person, there is no person, or do you take the view that no person is addicted to smoking?
A. Well, what do you mean by the word addictive?
Q. Well, that's a request for you, sir, I just ask them?
A. If you use the broad sense of an addiction, as it is being popularly used now, as something people do all the time, then yes, a substantial number of people who are cigarette smokers would say I'm addicted.
Q. Under that definition?
A. Under that definition.
Q. So -- you finish your answer?
A. Under the definition, that would discriminate between substances that involve intoxication, tolerance, withdrawal and so on, in the way that I have described, then cigarette smoking would not be addictive.
Q. The --
A. So, I think that my point earlier was that these labels are not terribly useful, and so it's more important to actually pay attention to the facts of what people do and don't do.
Q. All right. If you will, sir?
A. Yes, sir.
Q. The broad definition is the one that the Surgeon

3426

General announced in his report in 1988, correct?
A. The definition that he used then, yes, I think it does tend to reduce to that, yes.
Q. So the Surgeon General has said that nicotine is addictive, correct?
A. Yes.
Q. All right. And under that definition, you and I have

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

agreed now, that people who smoke or some people who smoke
are addicted?
A. Yes.
Q. And likewise, the American Medical Association has
stated that nicotine is addictive, correct?
A. The American Medical Association?
Q. Yes, sir. Yes, sir.
A. I'm not sure what you are referring to.
Q. Well, if you allow me, please. American Medical
Association identifies nicotine as a drug of addiction; its
policy compendium was issued in 1994. Do you recall that?
A. The problem is that there is no word addiction that's
officially sanctioned for diagnosis, and so that term is
more of a political statement. It would depend on the
statement of the Surgeon General and that is really not, I
don't regard that as a proper diagnosis. And so it's
troublesome when the medical association would use a term
that's really not properly sanctioned.

3427

Q. Well, putting aside your disagreement, and you can
voice that if you will in a moment, can we agree that the
AMA has stated, as I indicated, that nicotine is a drug of
addiction. Do you agree with that, that they have done
that?
MR. BERNICK: Objection. At this point I think
there is a lack of foundation, unless he's making
reference to the document, we would like to see it.
MR. ADELMAN: I would be happy to put this up.
MR. BERNICK: If it is the actual document from
the AMA.
MR. ADELMAN: No, your Honor, it's a demo.
MR. BERNICK: I would object, your Honor.
MR. ADELMAN: He's an expert, I'm entitled if
he knows.
THE COURT: He can ask him if he knows. I
think he's already answered that. Do you have personal
knowledge as to whether the American Medical Association

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

has termed tobacco as a drug of addiction?
THE WITNESS: I'm actually not familiar with that particular statement.
THE COURT: He says he doesn't know. If you want to find it there and show it to him you may be able to do that. Why don't you move on at this time.
MR. BERNICK: It is a demo.

3428

MR. ADELMAN: It is a demo, yeah.
THE COURT: Do you have the underlying document?
MR. ADELMAN: No, I just have the demo, your Honor.
The National Institute of Health, doctor, do you not know, has also stated that nicotine is addictive?
A. I have seen statements like that from the National Institute of Health.
Q. The World Health Organization has also said nicotine is addictive?
A. Well, I'm not sure what you are referring to there, because I know for sure that the World Health Organization is not sanctioning the use of the word addiction. And for it to contradict it's own policy I think would be a problem.
Q. The American Cancer Society has stated that nicotine is addictive, do you know that?
A. Yes.
Q. Do you know that the American Psychological Association has said that nicotine is addictive, correct?
A. Yes, sir.
Q. American Lung Association has said that, do you know that?
A. Yes.

3429

Q. The American Heart Association?
A. Again, I'm sure of their general position about it being difficult to stop quitting, to stop smoking. I'm not sure about the official use of the word addiction. As long as we agree that addiction only means something that people do repeatedly, then I'm comfortable with these statements you are asking me.

http://legacy.library.ucsf.edu/tid/ovw05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

Q. Let me go through them. Do you know that the US Departments of HHS, Health and Human Services, has stated that nicotine is addictive?
A. Yes, I'm sure of that.
Q. And the medical research council of the United Kingdom has also stated that nicotine is addictive?
A. I'm not familiar with that statement.
Q. And doctor, has it come to your attention that there has been testimony in this court that the research scientists, many of them at the facility conducting research for Philip Morris in Richmond, have indicated their view that nicotine is addictive. Do you know that?
A. I've certainly seen things that use that word addiction; and of course, with all the qualifications about what that word means, yes.
Q. And the American -- excuse me. The American Psychiatric Association, as you pointed out, the DSM 4 has stated diagnosis of substance dependence applies to

3430

nicotine, correct?
A. Yes, sir.
Q. And I take it you do not agree with the Surgeon General's conclusion in 1988 that nicotine is addictive?
A. Well, it's a peculiar statement. I actually am not disagreeing. I'm trying to make the point that the Surgeon General, and I'm actually not disagreeing about the facts, in that I don't believe the Surgeon General in 1988 said that nicotine was intoxicating or that it led to tolerance to the pleasurable effects of nicotine, or that it was associated with a specifics physiological with withdrawal syndrome. So we are actually not in disagreement if you look beyond semantics.
Q. Well, with all due respect, sir, that definition you announced was what was put forth in the 1960, '64 by the Surgeon General, correct?
A. Yes, sir.
Q. And in '88 he changed it and, as you put it, broadened it, correct?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. He used a looser definition, then.
Q. And you don't agree with the '89 definition?
A. The '88 definition.
Q. '88, beg your pardon?
A. Well, that was simply something where he was actually using the criteria for substance dependence and switching

3431
the words in a very peculiar fashion. So there was no criteria, the criteria he used were not real criteria. He was substituting a word addiction and using criteria for dependence.
Q. Do you agree with that?
A. No, sir, I think it was a political decision.
Q. A political decision?
A. A political decision. And a political one in order to essentially use a word that would grab people's attention. And in a sense you could think of it in away of scaring people to pay attention and understand the public health motivation of that, but as a description of reality, I think it is wanting.
Q. Surgeon General of the United States, in your view, made a political decision regarding the definition of addiction with regard to nicotine, correct?
A. He has a political job, he made a political decision, yes, sir.
Q. You have also described the Surgeon General's conclusions from 1988 as corrupted science, correct?
A. I don't believe I actually did, but I'm familiar with what term you are meaning.
Q. Let me understand what you are saying.
Did you say, or have you said that the Attorney General's definition --

3432
THE COURT: Attorney General or Surgeon General?
BY MR. ADELMAN:
Q. Excuse me, Surgeon General's definition of addiction was corrupted science. Did you say that, sir?
A. Yes, sir.
MR. ADELMAN: That's all I have.
THE COURT: Thank you.
Do you have any redirect.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

MR. BERNICK: Yes, just very briefly.

REDIRECT EXAMINATION

BY MR. BERNICK:

Q. Mr. Adelman, Dr. Cloninger took you through a series of organizations, I think the American Cancer Society, American Lung Association, Surgeon General. Are all those organizations basically public health organizations?

A. Yes, they have that purpose.

Q. Do any of those organizations have responsibility for defining the criteria --

MR. ADELMAN: Object to the leading form.

THE COURT: It is somewhat leading.

BY MR. BERNICK:

Q. What responsibility, if any, do any of those organizations have for actually defining the criteria for addiction or dependence?

3433

A. They don't have any. The only organizations that have responsibility for establishing the nomenclature for psychiatric disorders like substance dependence is the American Psychiatric Association.

Q. Those are the folks who issued the DSM 4?

A. Yes, sir. That's the group I was consulting on the panel for.

Q. And when the Surgeon General, or any of these other organizations, go ahead and talk about addiction or dependence, what criteria, if any, are they actually relying upon?

A. They have to rely on the American Psychiatric Association, if they are going to use anything official.

Q. Okay. And under, under either the Surgeon General's label or the American Cancer Society's label, or the American Lung Associations label, is it proper, using those criteria, to express the view that smokers have lost control?

MR. ADELMAN: Object to the leading form.

THE COURT: Sustained.

BY MR. BERNICK:

Q. Just describe in your own words if there is any way in which these criteria can be properly applied to

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

say that
there has been a loss of control?
A. No. The evaluation of loss of control is something

3434

that has to be done on individual cases. And we know that
in the case of substance dependence that there is no loss
of control, in the sense that many people are able to quit
without any treatment, regardless of nicotine levels. And
so there is no loss of control or inability to stop,
otherwise people wouldn't stop; and they do stop.
MR. BERNICK: That's all I have.
THE COURT: Thank you. You can step down, Dr.
Cloninger.
I'm sorry, would you retake your seat. Would
the attorneys approach?
(The following discussion was conducted at the
side bar between court and counsel, out of the hearing of
the jurors, as follows:)
THE COURT: I just want to indicate for the
record that we have a question from one of the jurors.
The proposed question is, when you are testifying in court
are you being paid by the cigarette company? Do you
charge the cigarette company a consultation for your
testimony?
Then I think this is a question, the money goes
to the center not to you? I think it's asking then does
the money go to the center not to you?
MR. BERNICK: There is actually, Pat --
MR. COUGHLIN: There is an agreement that we

3435

won't ask about actual compensation. I don't know if this
goes to that question.
MR. BERNICK: I think it does.
MR. ADELMAN: Well, your Honor, I steered clear
of that because of the agreement. However, I think the
thrust of the question can be asked without getting into
dollars and cents and specific amounts.
MR. BERNICK: That really does change,

http://legacy.library.ucsf.edu/tid/ovp05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

and I'm,
frankly, your Honor, not directly privy to what all the discussions were about the nature of the agreement. I would defer to other counsel.
My understanding is the whole area was to be off limits; and frankly, we were discussing over here that Mr. Adelman's questions have already breached that agreement, he's gone too far.
MR. COUGHLIN: Your Honor, let's not ask it.
THE COURT: Okay, you can step down.
(The following proceedings were conducted in open court.)
THE COURT: Does the defendant wish to make any interim argument?
MR. BERNICK: Yes, your Honor.
Briefly, Dr. Cloninger and Dr. Parran did have one thing in common, which is that very, very few of the people they see come to them specifically for treatment of



or consultation about quitting smoking.
Why? Because most people do this on their own. They make a decision on their own, and overwhelmingly in both of their practice most of the people they see come to them with a whole series of problems or whole series of issues, often multiple dependence, which is a very special population.
But when Dr. Cloninger came to the stand he had some things in his background that are of -- that were of clinical importance that Dr. Paren didn't have.
Number 1, he is a highly published researcher and has nationally recognized expertise in this area. He is one of the people who participates in the process that leads to this. He is an authority on the question of what these labels and what these diagnoses really mean, how they are supposed to be used, what is the right way to use them.
He told you some things you already knew about

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

smoking, a multi-factorial process. There are many social reasons why people start to smoke and start to quit, but he told you two very important things that go to the heart of the cases. Remember the case is, was there something that the defendants did that affected smokers' decisions and increase disease?

The first thing he said is regarding smokers

3437

decisions. It is fundamentally wrong to take these labels like addiction and say people have lost control, they don't make choices.

You have seen that it's wrong, you have seen the quotation right out of the book, loss of control is violative of the basic precepts of this field, the basic precepts of the science. It cannot be used properly, scientifically to make that determination.

And the second thing he said is that as smokers make decisions, is there somehow a tobacco industry statement that they are relying upon, or that has influenced their decisions. Not only is that not so in his clinical practice, but he pointed to the Surgeon General's report.

THE COURT: You need to wind it up.

MR. BERNICK: Thank you.

THE COURT: Comments by the plaintiff.

MR. ADELMAN: Ladies and gentlemen, I was rather struck by the point counsel made here, and I think you should be struck by it too.

Do you remember Dr. Cloninger testified about his practice. We had to sort of draw it out of him. Finally we found out, he conceded he doesn't see smokers on a regular basis, this isn't his specialty.

Why is he here? I'll let you think about that.

3438

After you think about the fact that since 1993 he's been testifying for the tobacco companies, and yes, money goes to that foundation or whatever he's got over

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

there in St.
Louis, from who? Several sources including the tobacco companies, you figure out then, and I don't think it's going to be hard, why he's testifying, why he is saying what he does, and what he is saying what he does, is completely contradicted by the leading health organizations in the United States, starting with the Attorney General.

The Attorney General in 1988 said from the testimony, we know nicotine is addictive. This witness had the gall to say on the stand that that is corrupted science, the Surgeon General of the United States making a political decision.

Furthermore, Dr. Parran testified, and I dare say to you Dr. Parran tells us he works in Cleveland at a clinic for smoking troubled people, and I dare say to you that he looks in the eyes of more people with smoking problems in one week than this man, that man has ever done in his entire professional career. Who makes more sense; the man who does it or the man who talks about it? Who makes more sense; the man who goes and collects research or the man who does it every day of his life and has a personal commitment to it?

3439

Ladies and gentlemen, there is no question in this case, there is no question from this witness, even his concession after you pull it out of him, some of the '89 definition, the '88 definition of the Surgeon General, nicotine is addictive.

Thank you.

THE COURT: Would the defendants call your next witness.

MR. LOMBARDI: Yes, your Honor, Harold Burnley.

HAROLD BURNLEY

called as a witness by and on behalf of the Defendants, being first duly sworn , was examined and testified as

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

follows:
THE COURT: Before we begin, can the attorneys approach for just a second.
(The following discussion was conducted at the side bar between court and counsel, out of the hearing of the jurors, as follows:)
THE COURT: He's got a list of the order of witnesses. Have you given them one? Because if you have one I would like to get a copy of it.
MR. LOMBARDI: I know it would be Burnley and then Read.
THE COURT: Do you have anything in writing?
MR. COUGHLIN: No, it was over the phone last

3440

night.

MR. LOMBARDI: We can write one up for you.
THE COURT: If you get a chance, ask someone to jot down the names.
MR. LOMBARDI: Just handwritten.
THE COURT: That's fine.
(The following proceedings were conducted in open court.)
THE COURT: Would you tell us your name and spell your last name?
THE WITNESS: My named is Harold Burnley, B-U-R-N-L-E-Y.
BY MR. LOMBARDI:
Q. Good morning, Mr. Burnley?
A. Good morning.
Q. Good morning, ladies and gentlemen.
Mr. Burnley, you are presently employed by Philip Morris?
A. That's correct.
Q. What is your position at Philip Morris?
A. It's Vice President of Operations.
Q. How long have you been employed by Philip Morris?
A. A little over 25 years.
Q. Okay, tell the jury in very brief forms the two areas

3441

that you are going to testify about to them today, if you would, please?
A. I'm going to discuss how ammonia is used in Philip

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Morris products, and I'm also going to review the history of a project that Philip Morris called NOV, which stands for naturally occurring denitration.
Q. Before we get to that, Mr. Burnley, just tell the jury very briefly about your educational background, starting with college?
A. Well, I'm a chemical engineer. I graduate from Virginia Tech in 1967. I attended graduate school for a while at Stevens Institute of Technology in New Jersey, and later did some more graduate work in chemical engineering at Virginia Tech.
Q. After you finished your education at Virginia Tech, did you have some jobs before you went to Philip Morris?
A. I did.
Q. And just in very brief form, what kind of work were you doing during that time period?
A. Well, I was a process engineer working for DuPont, it's a -- it was a factory that made photograph film, actually medical x-ray film. And I worked as a process engineering working on optimizing and improving the quality of the product they made.
After leaving DuPont I was I guess I was there



for 2 years, I went to work for Allied Chemical, now called Allied Signal in a plants in Hopewell, Virginia, which made nylon cord and nylon carpet yarn. And I was a process engineer there as well. Did some work as a control systems engineer, and finally was promoted to an engineering supervisor before leaving in 1973 and joining Philip Morris.
Q. Because we are going to talk about this later, please tell the jury what you mean when you talk about being a process engineer?
A. Well, a process engineer generally takes the principals of science, usually chemistry, physics and mathematics, and converts them into something useful. I

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

give you an example.
A research scientist some time back working for DuPont invented nylon, and this was done in the laboratory by mixing chemicals in test tubes and beakers and understanding the basic chemistry produced nylon from some other materials.
The process engineer or chemical engineer usually gets involved at a time of a discovery like that is made, and tries to figure out how to make this material commercially.
Usually there are several phases to a project like that; one is called, I like to call it anyway,

3443

process development, where a process engineer usually is part of the R and D organization, scales up with what the scientist does, makes a pilot plant facility, which is like a miniature factory, and proves out the concept on an industrial basis.
If the company decides it's a worthwhile thing to do and they want to commercialize this and put a product in the marketplace, a process engineer then would have the responsibility to design build a manufacturing facility, start it up so that commercial product could be made.

Q. You joined Philip Morris in 1973?
A. I did.
Q. And has the work you have done in Philip Morris since that time fallen into the general category of process engineering?
A. That's correct.
Q. I take it you filled a variety of titles over that period of time?
A. Yes.
Q. During the 25 or so years you have been at Philip Morris, have you worked with scientists from the R and D Department at that company?
A. Yes, on and off for most of my career.
Q. Is there a difference between what you do as a

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3444

process engineer and what the R and D scientist does at Philip Morris?

A. Well, as I said before, they are part of, R and D is a pure research side where people are trying to develop fundamental understanding and trying to discover new things. I have worked in R and D as director and later Vice President of process development doing the initial commercialization for research concepts.

I've also spent a lot of time in the engineering where I had the accountability to design build what the research organization and the process development organization and the Research Department determined were commercially feasible.

Q. Okay. Has there been one area of the company's operations that you have been particularly involved with over time?

A. Well, pretty much, as I just said, it's been a process development, process engineering.

Q. Have you have you had involvement in manufacturing?

A. I have.

Q. And does Philip Morris have general goals that it seeks to meet in its manufacturing process?

A. Well, sure. We are a consumer products manufacturer like many other, and what's important to us is to produce a high quality product, an affordable product, a product

3445

that is very consistent, so that if someone uses our product it will be the same day after day, week after week, month after month. So I would say quality and consistency are sort of cornerstones of the way of our philosophy in the way we make our product.

Q. Let's turn to ammonia which has been an issue at this trial. Is ammonia used in Philip Morris's manufacturing processes?

A. Yes, it is.

Q. Okay. And I want to talk about that first, sir. When Philip Morris deals with tobacco, does Philip

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Morris
grow it's own tobacco?
A. No.
Q. Where does Philip Morris get the tobacco it uses in the manufacturing processes?
A. Well, we buy tobacco at auction, various places in the United States and some international location as well.
Q. Do you have a tobacco leaf up there with you?
A. I do.
Q. Would you show that to the jury, please?
A. It is a little messy.
Q. If you could, would you tell the jury what does Philip Morris do with that tobacco leaf when it receives it?
A. Okay. We buy tobacco at auction. We buy what's

3446

called a whole leaf, it looks like this. This happens to be a flu cured leaf or Virginia leaf, it goes by a variety of names. But this is one of the types of tobacco leaves that goes into the American blended cigarettes. But we do buy the whole leaf from the farmer.

And if you look at it you can see there is a stem in the leaf. You can see it going all the way through the body of the leaf. You will also see some smaller veins, these are tobacco, they are tobacco materials, but they are not directly usable in cigarettes.

The reason for that is, if you blend this leaf with the stem in it and cut it up, you'll create slivers. They will look a lot like toothpicks and they will punch holes in the paper and they won't burn very well and they will taste differently.

So the first thing we do is remove the leafy portion, which we call lamina or strip from the stem in a process called the stemmery.

What happens -- I'll hand stem it for you. This is done, of course, mechanically with machines. But the leafy part is separated, and it looks just like that,

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

it's packed, and stored for up to several years where it's aged. The aging process helps to meld the tobacco and provide stable storage for things like crop failures and so forth. So it provides some insurance as well.

3447

Q. Sir, once the leafy part you store and use later, is that right?
A. That's correct.
Q. Do you do anything to make use of the stem that remains?
A. Well, yes. I mean, this stem is part of the leaf we bought. Tobacco is a very expensive commodity, sells for, I don't know, a couple dollars a pound. This represents about 25 percent of the weight of the leaf. Since it is tobacco, Philip Morris and other manufacturers have learned how to, to reuse this stem, to reconstitute it into a sheet of tobacco that looks very much like the strip I showed you a second ago through a couple of different manufacturing processes.
Q. And these processes are called reconstituted tobacco processes?
A. They are.
Q. And how many -- there are two processes you said that Philip Morris uses?
A. Yes.
Q. And is ammonia used in those processes?
A. Yes.
Q. What is the first process, reconstituted tobacco process that Philip Morris began to use?
A. Well, we call it blended leaf or BL for short.

3448

Q. And have you supervised the preparation of a chart that points out or graphs the way that this process works?
A. Yes, I have.
Q. Okay. Now, Mr. Burnley, we are not going to go through all the steps of this, it would be too time consuming, but let me get you to just give the jury an overview. Can you point where on the chart where this

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

process begins, the pointed leaf process begins. There is a pointer right behind you.
A. The starting material for the process, really, is the stem that I showed you, and also, notice there are some small tobacco pieces attached to it. So the starting material is right here, stem and small tobacco pieces that are mixed together by a formula and ground to a very fine powder. It looks almost like flour at that point.
Q. And then what is the end point of the process?
A. The end point is a piece of reconstituted tobacco called BL. I think I have a sample with me.
Q. Would you just show that to the jury quickly, please?
A. This is a sample, so the stems and the small tobacco materials are converted into what looks very much like this strip tobacco, which can be blended in a cigarette factory with the strip tobacco and cut later and made into a cigarette.
Q. Now, let's show the jury where ammonia comes into the



process, Mr. Burnley?
A. Ammonia is introduced right here in an area called solution preparation.
Q. And what is the purpose, actually you have got on the chart, ammonium hydroxide and DAP. Are those the ammonia compounds you are referring to?
A. Yes.
Q. And DAP stand for?
A. Diammonium phosphate.
Q. What is the purpose of putting those ammonia compounds into the solution prep?
A. Well, it turns out that tobacco contains a natural substance called pectin. You may have heard of pectin, it is the same material that is used to thicken jams and jellies as sort of a natural glue.
In tobacco, however, pectin is a form that's not soluble in water, so if you were to throw tobacco in water the pectin wouldn't dissolve, and if it wouldn't dissolve it's not available for use as a glue.
Q. What does Philip Morris do to get the

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

natural glues
21 the pectins out of tobacco?
22 A. That's the role of diammonium phosphate and ammonia
23 hydroxide. It turns out this pectin is in the form of
24 calcium pectate, and in the presence of ammonia that pectin
25 converts to ammonium pectate, which is water soluble, and

3450
1 since now that it is water soluble, it will come together
2 and glue the tobacco that is ground at this point.
3 Q. Has Philip Morris used ammonia or ammonia compounds
4 to bring out the natural glue in tobacco?
5 A. No, actually the very first binder system was an
6 added binder, it was a glue grade gum called CMC or carboxy
7 menthol cellulose.
8 Q. Was that as good a way of forming a glue for the
9 blended leaf process as the ammonia compounds?
10 A. No, it turns out that it really wasn't. The CMC
11 sheet was fairly weak, so when this BL was shipped to the
12 cigarette factory and processed and blended, it had a
13 tendency to fall apart and turn to dust again. So it
14 didn't produce a very strong sheet.
15 And also, the added gum gave our cigarettes a
16 bit of an off taste which was undesirable, so the company
17 began looking for alternative binder systems that would
18 perform better in our cigarette factory, and also provide
19 a better tasting product.
20 Q. When did Philip Morris discover that it could use
21 ammonium compounds to bring out the pectins?
22 A. I think the work began around 1965 to develop an
23 alternative binder system.
24 Q. And was that done by engineers at Philip Morris?
25 A. It was done by a -- the research work was done by a

3451
1 chemist called, I believe his name was Jack Hind, and an
2 engineer called, his name is Bill Wilkinson.
3 Q. Was Philip Morris's use of these ammonium compounds a
4 secret?
5 A. No. In fact, Philip Morris has a couple of

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

patents
on the BL process. Of course patents are public record.
Q. Let me bring up one of those. I know that's hard to
see, but I'll bring it up a little closer. Can you see
that that is a patent that was issued to Jack Hind?
A. I can see that it's a patent.
Q. Okay. All right. Let me bring up the date of the
patent a little closer. The date November 21, 1967, do you
see that?
A. I see it glasses up.
Q. Let me bring up the abstract of the patent, okay.
And can you point out to the jury where the reference to
the ammonium compounds is in that abstract from the patent?
A. Well, right here, diammonium acid phosphate.
Q. And what does it say that that diammonium is being
used for.
A. It says it is employed to treat the tobacco parts,
tobacco plant parts. The treatment involves the
destruction of the alkaline earth. I can hardly read it.
Metal cross links of the tobacco pectins. The release of
the resulting tobacco pectins by a washing action -- I'm

3452

sorry, I can't really read it.
Q. Okay, by block, it's, I'll read the second line for
you and ask you if this is the process that's used at
Philip Morris.
The binder is made from tobacco plant parts and
involves the use of the naturally occurring tobacco
pectins which are obtained by a process in which
diammonium acid phosphate is employed to treat the tobacco
plant parts.
Is that the process used at Philip Morris?
A. That's it.
Q. Now, you mentioned that there is a second type of
reconstituted tobacco that is made at Philip Morris, is
that right?
A. That's correct.
Q. And what is that type? What's that process called?
A. Well, it's called R L, or reconstituted

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/hyxd0001

leaf.
Q. Why does Philip Morris have two methods of making reconstituted tobacco?
A. Well, there are several reasons. In the early 70's, the growth of the business required expansion, or really needed additional capacity for expanded tobacco. A decision had to be made at that time of what type of manufacturing process to use, and there were several considerations.

3453
There was a company called Sweitzer, Sweitzer was really a paper company, but in the business of developing reconstituted tobacco plants, actually doing some reconstituted tobacco development conversion for some manufacturers.
It turns out also that Sweitzer was claiming that their product was less biologically active than the cast type product that was in use before.
We also had a President who was, I think, quite a visionary and had a bit of a dream. And he was familiar with paper processes and said, well, if I had all the tobacco solubles in liquid form, as I learned more and more about the chemistry of tobacco and the risk associated with smoking, I might be able to remove certain substances.
So he made the decision to begin the conversion from BL to reconstituted leaf tobacco.
Q. And have we put together a chart of the reconstituted leaf method as well?
A. Yes.
Q. This one looks more complicates, Mr. Burnley. Is it?
A. Yeah, actually it is a lot more complicated.
Q. And again, we are not going to go through every step, but give the jury the same overview you did for the blended leaf process, if you would.

3454
What happens at the start? What goes in at the start and what comes out at the end?

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. Okay. The starting materials are almost identical to the ones at the BL plant. Start right here at the stem, the small tobacco pieces they are mixed together, again by a formula, and put into a tank where they are mixed with lots of water. This tank is called the pulper, and it's where the separation of the water soluble part of the tobacco from the non-water soluble part or the cellulose begins.

The net result of all of this processing is to produce another sheet of reconstituted tobacco. I have a sample of it as well, and it looks like this.

Again, very similar in appearance to strip tobacco and can be easily mixed with the strip tobacco components and blended for later cutting into a cigarette film.

Q. Later you referred to a reconstituted leaf process as a paper making process. Why do you call it a paper making process?

A. Well, if anyone is familiar with a paper mill or ever been in a paper mill, you would believe you were in one. This is all standard paper-making equipment and, in fact, this process was adapted by Sweitzer who was in the paper business. So it is a paper-making process.

3455

Q. One more point about how this process works before we talk about where the ammonia goes in. You have basically two paths on the chart; one is a red path and one is a green path. Why don't you tell the jury first, in a general sense, what's happening in the red path?

A. Okay. Well, as I mentioned before, the stem and the small tobacco pieces are mixed with water, so anything anything that will dissolve in water is now in the water.

This stream or this tank contents is pumped through a set of rollers, they are called presses. And if you have ever seen an old time washing machine

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

ringer
they are just counter-rotating rollers where this slurry
passes, and this is where you separate the fiber from the
liquid stream.
The liquid stream actually goes through
perforations in the holes and follows the green path. The
fiber screen follows the red path.
Actually what happens next is the fiber stream
is diluted with more water, diluted with more water again,
and forms a slurry of tobacco fibers, which are really
cellulose fibers, just exactly like making a sheet of
paper. They are distributed again in a head box, which is
a long box, I think it's 12 feet, on this paper machine,
and has an opening right here, a slice in it so the water
and fiber flow out on to this wire.

3456
This wire is moving, it's like a screen door
but it's moving. What happens is the screen holds the
fiber and allows the water to pass, and because of the way
the fiber is laid onto the screen, the fibers interlock
with one another and create the strength that the paper
has.
So instead of using binders to create the
sheet, you use the mechanical interaction, or the
interlocking of the fibers themselves.
And then they are simply, this sheet is simply
dried over a drum dryer and some smaller drum dryers, and
ends up at this point where solubles are reapplied.
Q. And the solubles, that's what's happening on the
green path?
A. It is. We, as I said earlier, we add an awful lot of
water here in order to get the solubles in solution. We
have to begin to remove that water, because we want to
reuse these soluble and reapply them to the sheet, so you
end with a tobacco sheet rather than a cellulose sheet. If
we didn't do that, you wouldn't have a usable

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

sheet, it
wouldn't be smokeable, it would taste pretty bad.
All of the water soluble materials which give
the tobacco it's flavor are in the green stream.
So the very first thing we do is remove some of
the water, we added in a device called an evaporator.

3457
It's exactly the same thing that's used to concentrate
orange juice, for example.
So this liquid stream now has some of the water
removed; there is also nicotine in this stream and a
substance called potassium nitrate, which is removed by a
crystallization process.
These tobacco solubles now, which have been
somewhat concentrated, are mixed with some other flavors,
including ammonia bearing flavors, and then reapplied to
the sheet, dried again, cut, and produce the sheet that I
showed you a second ago.
Q. Let's focus on where the ammonia is in this process.
And you just mentioned that it came in at the flavor stage,
is that right?
A. That's correct.
Q. And what is the role played by ammonia in the
reconstituted leaf process?
A. Well, the ammonia is a flavor. To explain why we use
it, I'll take you back to the previous process I showed
you, which was the blended leaf process. Here the DAP in
ammonia hydroxide are necessary to release the binders to
form a glue.
When the company began a conversion from
blended leaf to RL, we wanted to do it in a way that
wouldn't be perceptible to the consumer. In other words,

3458
the consumer really doesn't like you to change the taste
of his or her product, so what the flavors did was to add
flavors to the RL to make it taste as close to BL as
possible.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

And since the DAP and ammonium hydroxide flavored this product somewhat, similar compounds were used to flavor the RL so that it would taste not exactly like BL, but very similar to it. And that's really why the DAP and ammonia are used for flavors in RL.

Q. And what kind of flavor does the use of ammonia add to the reconstituted leaf process?

A. Well, I'm not a leave blender or a flavorist, I can tell you the language they use. These people are a little bit about, a little bit like wine blenders who use a lot of the same kind of language. What they say is these ammonia compounds give the tobacco a dark, mellow type taste, make it taste a little bit more like burley than some other types of tobacco -- burley being on of one of the tobaccos used in American blended cigarettes, one of the tobaccos that we use.

Q. And is that the extent of the use of ammonia compounds in the reconstituted leaf process?

A. It is.

Q. Now, over the course of time, for instance when you first came to Philip Morris, was ammonia used in other



manufacturing processes for tobacco?

A. Yes. The very first expanded tobacco process that we had used CO2 and ammonia to make a compound called ammonia carbonate, which was the expansion agent for expanded tobacco.

Q. Are ammonia compounds still used in the expanded process at Philip Morris?

A. No. Actually we abandoned the ammonia carbonate process several years ago in favor of a CO2 expansion process.

Q. And was that back in the 70's, or when did that occur?

A. Yes, it was back in the 70's.

Q. When you replaced the ammonia process for making expanded tobacco, did that have any effect on the amount of ammonia in the tobacco that went into Philip

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Morris
cigarettes?
A. Yeah, I suppose it reduced it somewhat. I mean, we were using one less ammoniated component.
Q. Does Philip Morris, today, use as much blended leaf reconstituted tobacco as it did when you first arrived at the company?
A. No. When I first came to Philip Morris all of the recon was blended leaf, I can't remember precisely what the percentage was, it was probably 15 or 16 percent, maybe

3460
even higher. Today it's around 6 percent, so there is less BL.
Q. Has the decrease in the amount of blended leaf tobacco had an effect on the amount of ammonia that is in a Philip Morris cigarette?
A. Well, it's, it's dropped it somewhat because of the lower percentage in the blend.
Q. Okay. Today, for a typical Philip Morris cigarette that a consumer would buy on the shelf, what percentage of the tobacco in that cigarette has ammonia in it?
A. 14, 15 percent, something like that, depending upon a particular brand.
Q. Okay. And today, are the blended leaf process and the reconstituted leaf process the only processes Philip Morris uses that involve ammonia?
A. Yes, they are.
Q. Now, Mr. Burnley, there have been allegations made that Philip Morris uses ammonia to raise the pH of tobacco smoke and to increase the kick from nicotine. Have you heard those allegations?
A. I have.
Q. Is that true, is it true that Philip Morris uses ammonia for the purpose of increasing a nicotine kick?
A. No, sir. The use of ammonia and the rationale for the use of ammonia is pretty much just the way I described

3461
it. It was used, it was originally used as a binder system

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

for BL and it was later added to RL in order to ease the transition from BL to RL. So it was used really initially in BL to hold the sheet together, and it was used as a flavorant in RL.

Q. I want to turn to the second top, now, Mr. Burnley, and that's the NOD project. That stands for naturally occurring denitration, is that correct?

A. That's right.

Q. Did you work on the NOD project during your time at Philip Morris?

A. I did.

Q. And when, approximately, was that work taking place?

A. If my recollection is correct, I think we began late, maybe October of 1980. And the last involvement I can remember having was some time in 1984, it was about a four year time period.

Q. Okay. Was there a particular manufacturing process that this NOD project was relevant to?

A. Yes, it was being targeted for use at the RL plant.

Q. Okay. So this would be the reconstituted leaf process that's still on the screen?

A. That's right.

Q. Before we actually explain where the NOD process fit in, could you just point to the jury so we'll see where on



this that reconstituted leaf process, the NOD process fit in?

A. Right here, we're on this black block that says KNO3, which stands for potassium nitrate.

Q. And what is the significance of potassium nitrate?

A. Well, potassium nitrate gets into tobacco from fertilizer. It is essentially fertilizer, nitrate fertilizer, and it is stored primarily in the stem.

Also, potassium nitrate, when a cigarette is burned, converts, or at least some of it converts, into nitrogen oxides which have been attributed to certain health risks.

Q. Are you familiar with something called the Hertsfeld

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

Index?
A. I am.
Q. And was that something that was in existence back in the 70's?
A. It was. Yes, it was in existence in the mid-to late 70's.
Q. Just could you just tell the jury what the Hertsfeld Index was and how it related to potassium nitrate?
A. Okay. Dr. Hertsfeld was a Swiss scientist who published a list of smoke constituents that he believed to be health risks. And he rated cigarettes that were commercially available in the marketplace, I believe just

3463

in Europe, according to his index.
So what he did was analyze smoke and say, if you have these components in smoke, and they are in high concentrations, he had a way of weighting the concentrations of these components to determine the relative risk, in his opinion, of various cigarettes.
Nitrogen oxides were one of the things on the Hertsfeld Index.
Q. And the relationships between the nitrogen oxides and the potassium nitrate that's being removed is what?
A. Well, potassium nitrate is a precursor to nitrogen oxides. When the cigarette is burned the potassium nitrate is converted or oxidized into various oxides of nitrogen.
Q. Did Philip Morris, during your time there, particularly during the 1970's, take actions based on the information on the Hertsfeld Index to try to remove potassium nitrates?
A. Yes, we did. We had an opportunity because of the way the RL process was designed. I mentioned earlier, we have solubles in a liquid form and it was -- gave us a convenient way to remove them.
So we began looking at actually three processes, three physical separation processes. One was called crystallization, one was call electro dialysis, and the other was called reverse osmosis, which would

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

allow us

3464

to remove at least a portion of the potassium nitrate.

Q. Did you settle on one of those three methods as a method of removal of potassium nitrate?

A. Yes, we did. We found that crystallization was the most effective and most reliable process, and we did install it in Park 500 on the first line, and as additional capacity was built on subsequent lines.

Q. What percentage of the potassium nitrates could be removed through the crystallization process?

A. To the best of my recollection, on average it was around 60 percent. But you have to remember the nitrate concentration in the stem varies with the crop year, and so forth. So around 60 percent I think is a fair number.

Q. Some time after you started using the crystallization process did the NOD program begin?

A. Yes, it did.

Q. And how did the NOD program start?

A. Well, it was kind of, kind of serendipitous. The plant that this process was installed at, we call it Park 500, which is the RL process shown here, from time to time would observe that no potassium nitrate was being removed in this process; it would just stop. No nitrate crystals would come out of the centrifuge.

So R and D was assigned the job of trying to troubleshoot the process and figure out what was wrong.

3465

And what they learned, as they analyzed the process, is that there was no potassium nitrate at all in the stream feeding the potassium nitrate removal step, so if there wasn't anything there, there wasn't anything to remove.

So it wasn't that the process wasn't working, something was happening up stream in the process that was consuming this potassium nitrate.

Q. Did they come to some conclusion as to what it was

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

that was happening that was removing the potassium nitrate?
A. Yeah. Actually, one of the research scientists, as he was walking around Park 500 trying to figure out what happened, saw some brown gas coming off one of the tanks.
Brown gas is a telltale sign of one of the nitrogen oxides.
So Bernie, the man's name was Bernie Simp, began doing some analysis of the tanks and found out there were certain micro organisms naturally occurring in tobacco that, under certain conditions, were consuming the potassium nitrate.
Q. When you talk about micro organisms that are consuming the potassium nitrates, what is a micro organism?
A. Well, they are single cell living creatures.
Q. Are they like bugs?
A. They are bugs, yeah.
Q. Now, did Philip Morris devote resources and time to trying to make this naturally occurring denitration

3466

program, the NOD program, work on a commercial level?
A. Absolutely.
Q. How many people worked on this project over time?
A. Well, I'll have to guess. My recollection is not, is not that good, but if you consider all of the scientists and engineers and consultants and technicians and people that did analysis in the laboratories and so on and so forth, I would say easily 75 people, maybe more.
Q. Did Philip Morris build in any new facilities as part of its attempt to find a way to make the NOD program work?
A. Yeah, based on the work that the microbiologist did in the laboratory, we built a pilot plant to try to scale up the laboratory process to see if we could make it work commercially.
Q. Approximately how much money did Philip Morris spend trying to make this NOD project work?
A. Gee, I don't know. When you consider the salaries of the people and the equipment, it had to be tens of millions

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

of dollars, but I'm not sure precisely.
Q. Now, at some point was a decision made not to use the NOD process?
A. Yes, it was.
Q. Were you involved in that decision?
A. I was.
Q. And what was your involvement in the decision?

3467
A. Well, I was responsible for adding a third line of Park 500, adding capacity. And we were at a point where we had to make a decision on technology. And I actually made the decision, or made the recommendation, not to use this technology because, in my judgment, it wasn't really ready; there were too many problems with it. It was unreliable, and it just wasn't fair to ask a manufacturing organization to operate a manufacturing process like this that had so many problems. So I actually recommended against it.
Q. Was your recommendation accepted?
A. It was.
Q. And approximately when was your recommendation accepted?
A. It was, it was in 1983 sometime.
Q. Now, you said that one of the reasons you made this recommendation was because the process was unreliable.
What made the process unreliable?
A. Well, it worked. I mean it. We had difficulty starting it up, this process, as I mentioned, used micro organisms to eat the potassium nitrate. And when you start up a process like that, you have to put some bugs in the tanks to make the reaction proceed. And these bugs were called seed cultures. Sometimes it would start and sometimes it wouldn't, so the start up was pretty unreliable.

3468
We did -- when it would run, the rate at which it would eat, the bugs would eat the potassium nitrate varied. Sometime the reaction rates were fast, sometimes they were slow.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

So if you're an engineer trying to design this thing for a real living plant, it makes it tough. You need to know how big to build the tanks, and how big to build the pipes, and to build the pumps, and how to control it. And with the different reaction rates this is really impossible to do.

There were other problems. From time to time these micro organisms created byproducts.

Q. What do you mean by byproducts of micro organisms?

A. They were sort of waste products of the micro organisms, and they were things like butyric acid and propionic acid. And these things smelled bad, tasted bad.

You know, at the time when we had to make the decision, although the concept was very compelling, pretty neat, I personally wanted it to succeed because I like new technology and I like implementing it, it just wasn't ready. So we made the decision not to use this technique for now, but to keep working on it to see if we could resolve the problems.

Q. If the NOD process was put into play at Philip Morris and you ran into one day when the process simply didn't



work, it wasn't reliable, what would happen to the potassium nitrate removal that day?

A. Well, it would go to zero. Or in some cases if it worked partially it might convert the potassium nitrate to nitrite, which is much more hazardous than the potassium nitrate itself. So it wouldn't work at all, or it would create intermediate products that were, in my judgment, more risky than the potassium nitrate.

Q. Approximately when was it that you made the decision to recommend against NOD?

A. It was in 1983. I can't really remember the month.

Q. Okay. Now, did work continue on the NOD process after you made the recommendation not to go with it?

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. Yes, it did.
Q. And why was that?
A. Well, as I said a second ago, we were, you know, it was a compelling concept. It had the potential, if we could make it work, to completely denitrate the RL sheet, which was, had always been one of our objectives. So we thought it was worth the investment to continue the research and development to see if these problems could be overcome.
Q. Now, did you know a Dr. William Farone at the time he was at Philip Morris?
A. I did.

3470

Q. Was he directly involved in this NOD project?
A. Well, I wouldn't say he was directly involved. He was, at that time he was Director of Research, however, a lot of the scientists who were working on this project reported either directly or indirectly to Dr. Farone.
Q. Was Dr. Farone involved in addressing the practical problems associated with NOD that you worked on as a process engineer?
A. Well, no, I don't really -- I don't remember him in the trenches with us trying to resolve the problem, if that's your question.
Q. That's my question.
Have you heard the phrase paralysis by analysis before?
A. Oh, yes.
Q. Was NOD an example of a situation where Philip Morris was paralyzed by analysis and unable to act because of that analysis?
A. No, I don't think so, at all. This is a case where this process just wasn't ready to be commercialized. And I, it wasn't a situation where you were analyzing alternatives to death, this thing just didn't work when the decision had to be made.
Q. If the NOD process could have been made reliable, would you have recommended its use?

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

3471

A. I would have.
Q. Are you aware of any tobacco company in the whole world that's been able to make a process like the NOD process work?
A. Not to my knowledge.
Q. There has been testimony in this case that the NOD project was turned down because it would have cost too much, is that true?
MR. COUGHLIN: I object.
A. That is not true.
MR. COUGHLIN: We are leading pretty much here.
THE COURT: Sustained.
BY MR. LOMBARDI:
Q. Was the --
THE COURT: Disregard the last question and last response.
BY MR. LOMBARDI:
Q. Was the NOD process terminated due to the cost of the process?
A. No, it wasn't.
Q. Has Philip Morris continued to remove potassium nitrate since the time of the NOD process?
A. Yes.
Q. And by what method?
A. By crystallization.

3472

MR. LOMBARDI: I have no further questions.
THE COURT: We'll take about 10 minutes. At 20 minutes or 21 minutes after be back in the jury room. But we'll stand in recess until that time.
(Brief recess.)
THE COURT: If the jury will retake their seats.
There is some additional direct examination.
MR. LOMBARDI: Your Honor, I just want to state for the record, I neglected to identified by number the exhibits. The reconstituted leaf exhibit was Demonstrative 7650, the blended leaf demonstrative was 7651, and the patent was exhibit IWP 7127. Thank you.
THE COURT: Is that correct? He's not supposed to be testifying, so you need to testify.
THE WITNESS: That's correct.
THE COURT: I am allowed to lead the

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

witness.
Cross examination.
CROSS EXAMINATION
BY MR. COUGHLIN:
Q. Good morning, Mr. Burnley?
A. Good morning.
Q. Now, is it year or every couple years the tobacco industry provides a list of ingredients to the Federal Government?

3473
A. I believe that's right, yes.
Q. And that list contains about, well, in '94 it contained 599 ingredients, is that right?
A. That's about right.
Q. Can we show Exhibit 3765? And this is the list I'm talking about. And if we look up here it talks about ingredients added to tobacco in the manufacture of cigarettes by the 67 major American cigarette companies, is that right?
A. That's right.
Q. Okay. And it lists Philip Morris as one of the companies down here on the bottom of the footnote, do you see that?
A. I do.
Q. And that list is provided, that's the additives that all the tobacco companies use in the their products, is that right?
A. Yes.
Q. It's not broken out by brand, is that right?
A. That's correct.
Q. And if we could just flip to the last page.
And in '94 it was approximately 599 ingredients. Is that about what you remember it?
A. That's about right.
Q. How many in one given cigarette? How many additives

3474
are added?
A. Gee, I don't know, it would vary from cigarette to cigarette.
Q. It could be hundreds?
A. I doubts it, but I suppose it's conceivable.
MR. LOMBARDI: Your Honor, I just object. It is beyond the scope of the direct. It was a very focused direct on two issues; and ingredients was not one of them.
THE COURT: I think we dealt with some of these

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

issues, I'll allow that question.
MR. COUGHLIN: I'm just moving by that.
Q. Now, these additives, you understand that the Surgeon General has identified 43 agents as tumorigenic in tobacco.
43 of these chemicals that are in tobacco as tumorigenic, you understand that, don't you?
A. No, I'm really not aware of that.
Q. Have you ever heard that?
A. I've heard that there are tumorigenic constituents in tobacco smoke, yes.
Q. Now, you spoke about a little about it, about some of your testing procedures, is that right? Do you do whole product testing?
A. I don't believe I did testify about our testing procedures.
Q. Do you do whole product testing?

3475

A. You'll have to give me a little more information, I'm not sure I understand what your question is.
MR. LOMBARDI: Your Honor, I interpose an objection as beyond the scope of the direct examination.
MR. COUGHLIN: I don't think it is, your Honor. He talked about taking out ingredients, certain ingredients, that they were risky and hazardous, and I'm going to talk about that testimony. He went into great detail, half his testimony was about that, the other has half was about the additive of ammonia.
THE COURT: Let me ask counsel to just quickly approach.
(The following discussion was conducted at the side bar between court and counsel, out of the hearing of the jurors, as follows:)
THE COURT: I thought it was pretty limited to just the two type of chemicals, this process, the use of the this microbiology to reduce one substance and then the ammonia on the other, and then the manufacturing of the tobacco leaf. I don't know what you are responding to.
MR. COUGHLIN: Two things, your Honor. I don't

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

22 think they have a right to bring in a witness in here
23 who's the head of the processing to talk about what
24 ammonia is added for and why it's not, and then also talk
25 about taking out a risky constituent, and I would just be

3476
1 limited to that. I have a right to explore what they do
2 in testing and how they test.
3 I have literally nine question areas of this
4 guy. I should be done in 20 minutes.
5 THE COURT: I think you are limited to the
6 direct.
7 MR. COUGHLIN: I don't think I am on a witness
8 like this.
9 THE COURT: You could have subpoenaed him, you
10 could have taken his deposition, called him in your case.
11 MR. LOMBARDI: He did take his deposition.
12 THE COURT: You could have used it in your
13 case. I don't think you are limited in the scope of their
14 cross to that generally covered by the direct.
15 MR. COUGHLIN: I do think this is covered by
16 direct. Did do they do whole product testing and separate
17 ingredient testing.
18 THE COURT: I don't remember any of the
19 testing, so if you want to make a proffer, make a proffer.
20 (The following proceedings were conducted in
21 open court.)
22 BY MR. COUGHLIN:
23 Q. When you were testifying you were talking about the
24 NOD procedure that you went through, is that right?
25 A. Well, I tried to describe the NOD process and some of

3477
1 the difficulties that we had with it.
2 Q. And in describing that process, you were dealing with
3 an ingredient in tobacco smoke that you were trying to
4 remove, is that right?
5 A. Yes, that's correct.
6 Q. Okay. And you had identified that as an ingredient

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

that posed a risk, a health risk, is that right?
A. That's what Dr. Hertsfield said, yes.
Q. And Dr. Farone or William Farone?
A. I don't know.
Q. But Dr. Hertsfield told you that, right?
A. He didn't tell me, but it was published in his index.
So presumably he thought it was, you know, less than safe.
Q. What I'm asking you, were you involved -- I'll just
ask you this, were you involved in any of the testing,
either whole product or ingredient testing for tobacco, are
you involved in that personally?
A. I really don't understand what you mean by whole
product or ingredient testing.
Q. Let me ask you, whole product, I mean at the end of
producing say a pack of Marlboro cigarettes, does Philip
Morris ever take that product and test it, say, in vitro or
in vivo?
A. Oh sure.
Q. And that's done where?

3478

A. Well, there are some quality control checks that are
done in our factories where we do FTC tar and nicotine and
a lot of physical, measure a lot of physical parameters on
the cigarette like weight and length and circumference and
check the paper and make sure that the cigarette was made
properly.
Q. And those are quality testing procedures, right?
A. They are quality testing, right. And to make sure we
are in conformance with the advertising claims on tar and
nicotine delivery.
Q. And do you do any testing to see whether your
product's risky, in other words in vitro testing, like in
petrie dishes, with the smoke and see if you can grow
things and whether it kills it and things like that?
A. I'll tell you what, I know you are really getting far
out of my area of expertise. But sure, the company has
analytical chemistry labs and biological laboratories where
it does certain assays to evaluate changes we make

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

to the
product to make the best assessment possible about the
safety of those products.
Q. And is that in vitro testing, is that done in
Virginia?
A. No, I think all of the biological testing is done in
a lab in Germany. Actually there is one in Germany and one
in Belgium.

3479
Q. It is not done in the United States, is that right?
A. Not to my knowledge.
Q. Do you know of any agreement among the U.S. companies
not to do that type of research in the United States?
A. I'm not aware of any.
Q. How about ingredient testing, specific ingredient
testing? We talked about the additives of maybe hundreds
of ingredients that are added to cigarettes, do you do any
ingredient testing in the United States?
A. What kind of ingredient testing?
Q. The flavors, the various ingredients that are added,
you had a chart there, and at one part of the process you
had taken all of the solubles out and put it back in and
had an arrow with the flavors being added back in. I
assume that's where the 200 or so chemicals are added, is
that right?
A. They are not 200 or so chemicals, there are
relatively few chemicals added there. But the company
prepares some of its flavors. And as a quality control
check, before they are used in manufacturing there are
certain checks to make sure that the flavor batches are
prepared right and the right ingredients are there.
Q. But you don't do separate ingredient testing as to
the flavors, is that right?
A. I really don't understand your question. For what?

3480
Q. For the ingredients that are added for, the flavor
ingredients that are added. You don't do a separate check

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

in vitro or in vivo for those ingredients before they are added?
A. We do some checks to see if the flavors are there or are not there.
Q. To see if they are safe? Dr. Farone testified you don't, at Philip Morris, do specific ingredient testing in vitro or in vivo as to the flavors that are added?
MR. LOMBARDI: Objection to that testimony.
THE COURT: The question of the attorney isn't evidence. You will recall what his testimony was. Go ahead and rephrase the question.
MR. COUGHLIN: Okay. Maybe I could put it up on the elmo.
This is Dr. Farone's testimony.
Q. It says, now the question was now what is separate ingredient testing.
It says, well, separate ingredient testing is to make sure you want to know both things, you want to know all the ingredients, whether you are putting them together and separately, because if you are putting an ingredient into the product that is not good for that product, you need to know that second. Is that something you wanted to do in the course of your work at Philip



Morris?
Yes.
MR. LOMBARDI: Your Honor, this is from the transcript from this trial, and I don't think it's proper to confront the witness with the written testimony.
THE COURT: I'll sustain the objection.
BY MR. COUGHLIN:
Q. Are you aware of any separate ingredient testing the that's undertaken as to the flavoring?
A. Like I said, you are -- I'm not a toxicologist and it's really not my area.
THE COURT: Do you know? Are you aware of any such testing?
THE WITNESS: I know that some of our products

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

15 are tested at our laboratory in vivo, but I'm not aware of
16 specifically what test had been done on the products.
17 THE COURT: Go ahead and ask another question.
18 MR. COUGHLIN: Okay.
19 Q. You know Dr. J. L. Charles, don't you, or J. L.
20 Charles?
21 A. Yes, I do.
22 Q. And you consider him a well trained biological and
23 chemical scientist?
24 A. I do.
25 Q. And you worked with -- how long have you known him?

3482
1 A. At least 10 years.
2 Q. And he worked at Philip Morris with you?
3 A. Yes.
4 Q. Okay. And now, in your job as the process, in charge
5 of processes, right, you are in charge of that?
6 A. Yes.
7 Q. Are you in charge of adding the additives to the
8 tobacco and in the amounts that they should be added in the
9 concentrations?
10 A. Well, I don't physically do it, but I would provide
11 the equipment so that it could be done properly according
12 to the formula or according to recipe.
13 Q. Could we take a look at Exhibit 2388-A. Now, you were
14 showing shown this documents during deposition. Do you
15 remember this February 23, 1982 document?
16 A. Yes, I do.
17 Q. And it's from J. L. Charles to Dr. Osdene?
18 A. Yes.
19 Q. And who's Dr. Osdene?
20 A. Well, I'm not sure during that period of time what
21 Dr. Osdene did, but he was, he was a scientist that worked
22 in R and D for a number of years and had some other jobs as
23 well. During that time frame I'm not sure what his job
24 was.
25 MR. LOMBARDI: Excuse me, your Honor. Again,

3483
1 this is beyond the scope. There is no foundation that
2 this witness has seen this document, and I object to its
3 use.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

THE COURT: Well, it's somewhat premature, but I'll overrule the objection. But I'll ask counsel for the plaintiff what this responds to.

Let me just ask, we have got too many people going in and out of the courtroom, so I'm going to ask the security guard nobody goes in or out excepting during breaks, okay.

What's this respond to?

MR. COUGHLIN: This responds to the additives, your Honor, and I just have two questions on that that addresses that.

THE COURT: What's the foundation that this responds to as to the plaintiff's direct examination?

MR. COUGHLIN: As to the defendants direct examination?

THE COURT: Yes.

MR. COUGHLIN: They talked about why they added certain chemicals, including ammonia, and I believe that this witness testified as to why they added that and the impact of that.

THE COURT: And you believe this responds to that?

3484

MR. COUGHLIN: I do believe that on page 4 and 5 there is a response.

THE COURT: Upon that representation that this is going to respond to it, I'll overrule the objection. But it needs to respond to it. So if you are going to put it up you better be sure that it responds to something brought up by the defendant in their case on direct examination.

MR. COUGHLIN: Okay. Your Honor, if we could flip to the next page.

Q. And let's go to the next page.

It talks about the 1982 Surgeon General's report, and it says, for the first time associations between cancers, other than lung cancers, and cigarette smoking are being made in an emphatic manner.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Do you see that?
A. Yes.
Q. And it says, associated with cigarette smoking with
30 percent of all cancer deaths should make someone sit up
and take notice.
Do you see that?
A. I do.
Q. And let's flip to the next page?
MR. LOMBARDI: I object to just reading
something and ask the witness if he sees it.

3485

MR. COUGHLIN: I'm setting up the last question.
THE COURT: Go to the question.
BY MR. COUGHLIN:
Q. It says here, let's face facts, cigarette smoke is
biologically active.
Do you know what that term biologically active
means?
MR. LOMBARDI: Your Honor, objection.
THE COURT: Sustained.
BY MR. COUGHLIN:
Q. If you take a look at I, it says, we do not know
enough about the biological activity, the additives that
have been in use for a number of years.
Do you see that?
A. Yes, I do.
Q. Was doctor Charles in a position to know that?
A. Yes, he was.
Q. You talked about the addition of ammonia and what
that did to pH. Do you remember that?
A. I don't think I made references to pH, but I did talk
about the addition of ammonia.
Q. Do you know what effect adding ammonia to the
cigarettes has on pH?
A. Well, it would depend on how much ammonia was added.

3486

I mean, tobacco is a very, very good buffer and, up to
a point, probably nothing would happen to the pH.
Q. And well, you testified, I think you testified that
the addition of ammonia was not in any way connected with
trying to up the boost of nicotine, is that right?
A. I don't remember saying that.
Q. You just gave, I thought that's what you testified to
on direct, no?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. I don't remember making the statement. It's possible that I did, could it be read back?
Q. Well, I'll just ask you some questions. We'll see if we can get there?
A. Okay.
Q. You said the addition to ammonia was only done for glue purposes, to keep the, let's say, the reconstituted sheet together, is that right?
A. And as a flavorant in RL, that's correct.
Q. Were you aware, and if were you aware of research undertaken in the mid-60's by Philip Morris talking about nicotine delivery and pH and any relation that it would have to ammonia?
A. Yeah, I've seen some of those documents, both our own and our competitors, in preparation for some of the deposition I've given.
Q. And you know that Philip Morris determined in the



mid-60's that nicotine delivery can be controlled via filler or smoke pH adjustment?
A. Well, I remember a memo where an individual made that statement, but I don't believe it's accurate.
Q. And what's your basis for not believing it's accurate?
A. Well, what memo are you referring to? Maybe we could take talk about it.
Q. Let's take a look at Exhibit 518.
This is a memo of March 31. You talk about in 1965 developing a process, do you remember that?
A. Yes.
Q. And what process was that that you were talking about?
A. That was the BL process.
Q. And this report is on March 31 of 1966 and it tax about a progress report nicotine and smoke pH, do you see that?
A. Yes.
Q. And it talks about an attempt to study the effect of smoke pH on nicotine delivery and CA selectivity, do you see that?
A. Yes.
Q. And, well, up at the top if we look back at that same

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

25 paragraph, if we blow up that whole paragraph, it talks

3488

1 about cigarettes containing 10 percent by weight of
2 ammonium carbonate and 10 percent of oxacillic acid.
3 Do you see that?
4 A. Yes.
5 Q. And if we go down to the conclusions, I don't mean to
6 skip over the documents, if you want to see something else,
7 I just want to put it in context. It says nicotine
8 delivery can be controlled via filler or smoke pH
9 adjustment. Do you see that?
10 A. Yes, I do.
11 Q. And you disagree with that?
12 A. Yes. Yeah, I do. If you look at the data.
13 Q. Let's fill it up, if we could bring the whole
14 document back?
15 A. Look at the next page. Look at the next page with
16 the data on it.
17 Q. And, in fact, all the data is that smoke pH of
18 Marlboro and Marlboro 10 percent, if we could highlight the
19 5.1, 5.83 a and 6.2, is that what you are referring to.
20 A. I really can't see this. Could I have a copy of it?
21 Q. Yes. In the middle of that is 518, I believe?
22 THE COURT: You can also look to your immediate
23 right.
24 Can you see it on the screen?
25 THE WITNESS: Yes, I can now.

3489

1 Those numbers. 5.15, 5.83, and 6.62.
2 Q. If you could read that, is that what you were
3 referring to about how the pie --
4 A. Yeah, could you scroll down a little bit more.
5 Q. Yeah, let's blow that whole chart up.
6 THE COURT: You want to ask a question?
7 MR. COUGHLIN: I thought he wanted to show me
8 something on the chart.
9 A. You know, I looked at this document actually last
10 night, and the last page I looked at had a different chart
11 on it. Is there another? Is there another chart.
12 Q. There is another chart, the next page?
13 A. Yeah, that's the one. Could you blow that

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

up a
little bit.
Q. Certainly.
A. I think one of the things that this was -- this memo was written by Leo Myer, I think. And I think one of the things that Leo failed to pick up when he looked at his data, basically what, what Mr. Myer was saying was that when he added a lot of base, and he did add a lot of base, this is out of the realm of what is added to commercial cigarettes, that there was some slight increase in nicotine delivery.
Before you, but also on that chart, you'll notice that there is a increase in the number of puffs

3490
between the cigarette made conventionally and the cigarette made with all of the additives.
The net effect of adding that much base was that it actually slowed the burn rate of the cigarette down, added another puff, and added an increase both in nicotine and tar delivery.
If you were to normalize that for puff count, that is different, the total nicotine delivery by the number of puffs, and look at it on a per puff basis, when I calculated it out last night I got exactly the same nicotine delivery per puff. So I don't really think the data in this memo supports the conclusions that he made.
Q. That he reached at that time?
A. That's right.
Q. In '66 -- okay. Did you know that, and you said you would, some other companies had taken a look at this same issue. If we could take a look at exhibit 1935, A, do you see that? I think it's the next one right in front of you?
MR. LOMBARDI: Your Honor, I believe this is an RJR document, and I object to showing this witness a document from another company in the absence of some foundation, he saw it in the course of his employment at

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

Philip Morris, which I don't think he can establish with
this witness.
MR. COUGHLIN: Your Honor, I think this witness

3491
testified about processes in other companies. He not only
testified it was --
THE COURT: I think it's proper cross examination, because it deals with the ammonia issue,
although it's not, lay a foundation that it's not his
document not his statement. Not necessarily something
that he's seen.
BY MR. COUGHLIN:
Q. This is RJR. Taking a look it says, Philip Morris
began using a ammoniated sheet material in 1965 and
increased use of the sheet periodically from '65 to '74.
This time period corresponds to the dramatic sales increase
Philip Morris made from '65 to '74.
What I wanted to ask you, was that the time
actually that Philip Morris began using the a modulated
sheet?
A. Yeah, I think we actually began using BL commercially
around 1968.
Q. So were you experimenting with it in '65, '66? You
originally said '65 in your direct?
A. Yeah, I said mid-60's, I'm not sure, to be very
honest with you. I know the first plant was modified in
1968, there may have been some pilot sheets used before
that, I'm just not sure.
Q. Let's take a look at Exhibit 1208. This is another

3492
RJR document. Let's flip into page 2, but it's actually
page 4.
And let's blow up the top 3 paragraphs. This
talks about smoke pH and free nicotine from RJR, and
they are analyzing Marlboro. And it talks about how
Marlboro delivers, about in the second paragraph there,
delivers about the same amount of total smoke, nicotine as

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

do our comparable brands, however, Marlboro is typically
at stage 67.8 and 7.3.
Do you see that?
A. I do.
Q. On the chart we saw earlier from Philip Morris, it
had a lot lower pH levels, is that correct?
A. Yeah. The data, at least recent data I've seen on
Philip Morris products, had has quite a bit lower pH
levels, smoke pH levels.
Q. In fact, they are under 6?
A. That's right.
Q. Are you involved in the measuring of pH's at Philip
Morris?
A. No, I haven't been directly involved.
Q. So you don't know how that's done, you don't know if
it's done with the slurry method or electrode method?
A. I don't know what the protocol is.
Q. Have you ever heard anybody say the only way you

3493

could properly measure pH is to measure the free nicotine?
A. No, I haven't.
Q. You are not aware of that?
A. No.
Q. Okay. Let's take a look at this last paragraph here.
As a result of its higher smoke pH, the current
Marlboro, despite a two-thirds reduction in smoke, tar and
nicotine, over the years calculates to have essentially
the same amounts of free nicotine in it's smoke as it did
the early Winston.
Do you see that?
A. Yes.
Q. And it is your contention that's wrong?
A. I don't know one way or the other.
Q. You don't know anything about free nicotine?
A. Well, sure, I know about free nicotine, I just don't
know whether the statement made here is accurate.
Q. You know about free nicotine?
A. Yes.
Q. And you know about your brand Marlboro?
A. Yes.
Q. Do you think that even though tar and nicotine had
been reduced over the years, that because it still had the
same amount of free nicotine as did an early Winston, do
you know anything about?

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3494

A. The only thing I can say to you is the data I've seen, the smoke pH data that I've seen for our products, has a pH of around 5, maybe a tad higher than 5. And I saw that for a wide variety of products. These products contain the added ammonia compounds that we talked about before.

I've also seen curves called the -- I can't remember what it's called now -- the Hasselton Haselbach equation, or something similar to that, which shows the pH required for nicotine to be in its free base state.

Q. And that's in excess of 6, right?

A. Yeah, that's in excess of 6.

Q. And here you have RJR finding that when actually they do the measurements of Marlboro and Kool, that the pH is 6.8 to 7.3 for your brands?

A. That's right. And I don't know how they made the measurements or what the protocol was.

Q. You don't know the criticisms also of the electro or slurry method?

A. No, I don't, I'm sorry.

Q. Let's take a look at a Philip Morris document dated June 24, 1994, Exhibit 3806.

And I think you have it in your binder there. Do you have that?

A. Yes, I do.

3495

Q. Okay. And here it talks about the effects of cigarette smoke pH, on nicotine delivery, and subjective evaluations.

Do you see that?

A. Yes.

Q. It says the pH, you took a look at this last night didn't you?

A. I did, yes.

Q. So you have seen it before?

A. Yes.

Q. Okay. And it goes through and talks about the pH of an American blend tobacco filter. Do you see that at 5.5 with the smoke at about 6? Do you see that?

A. What paragraph is it in.

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

Q. Right at the first paragraph. I'm sorry. The pH of American blend cigarette tobacco filler is approximately 5.5?
A. Yes.
Q. The pH of cigarette smoke is approximately 6?
A. Yes.
Q. And basically this document, when you read it, it basically concludes we found increased filler pH, just as they had found in 1966, that we found that increased filler pH resulted in enhanced electro physical and subjective effects. And it talks about seeing a figure which is on

3496

the back page. We interpreted these data to mean that higher pH has resulted in more unprotenated nicotine, and that's free nicotine?
A. Yes.
Q. And a more, what is it, physiologically effective form.
Do you see that?
A. You lost me again.
MR. LOMBARDI: Your Honor.
THE COURT: Sustained. Would counsel approach.
(The following discussion was conducted at the side bar between court and counsel, out of the hearing of the jurors, as follows:)
THE COURT: You are going to need to stay on his direct examination. He didn't give any testimony on this issue, and it's way beyond what expertise he claimed he had. So we are not going to run through any more documents unless they deal with the ammonia.
MR. COUGHLIN: That was the last document I had anyway.
THE COURT: Okay.
BY MR. COUGHLIN:
Q. Mr. Burnley, I realize this pH area, and this ammonia area, and these things are outside your area of expertise, is that right?

3497

A. Well, I'm pretty familiar with how ammonia is used to

http://legacy.library.ucsf.edu/tid/ovw05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

make the product, and how it functions in the product. But when you talk about the effect of ammonia on nicotine and it's physiology on the body, it's way beyond my area of expertise.
Q. I probably shouldn't have been asking you those questions, that's another department of Philip Morris that would be doing these kind of tests and making these kind of determinations. Is that right?
A. Yes.
Q. And as far as the NOD project, you, you understand that Mr. Farone had a different opinion about whether that project should have gone forward and continued to be funded at Philip Morris, is that right?
A. Yeah, I think Bill Ferone was disappointed that we didn't implement the process.
Q. And you just made a different decision, is that right?
A. Yes.
MR. COUGHLIN: Okay. I have no further questions.
MR. LOMBARDI: Just two quick points, your Honor.

- - -

REDIRECT EXAMINATION

3498

BY MR. LOMBARDI:
Q. Mr. Burnley, you were asked on cross examination about biological testing and ingredient testing. Is that within your area at Philip Morris?
A. No.
Q. Do you know someone named Richard Carchman?
A. I do.
Q. Did he have any responsibilities in that area?
A. Absolutely.
Q. You were asked about some documents from other manufacturers in other departments at Philip Morris relating to pH. Did you see those documents in the course of your work in the manufacturing area?
A. No.
Q. Did they have any impact on your use of ammonia in the manufacturing process?
A. Not at all.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

MR. LOMBARDI: Thank you.
THE COURT: Would the defendant call your next witness, or do you wish to make any interim argument?
MR. LOMBARDI: I would, your Honor.
THE COURT: Thank you. You can step down.
I'm sorry, would the attorneys approach and would you remain there.
(The following discussion was conducted at the

3499
side bar between court and counsel, out of the hearing of the jurors, as follows:)
THE COURT: The question I received is: In the making of tobacco for pipe and cigars, is there much less additives in the tobacco -- I think -- than there are in regular cigarettes, is that correct?
It's got some relevance and I'll ask him.
MR. LOMBARDI: I'll just say I don't know if he knows.
(The following proceedings were conducted in open court.)
THE COURT: I'm going to ask a question. In the making of tobacco for pipe and cigars, is there less use of additives than there are in regular cigarettes?
THE WITNESS: Well, I don't know anything about cigar manufacturers. It is my understanding that pipe tobacco is very heavily flavored.
THE COURT: Okay.
Do you have any follow up question?
MR. COUGHLIN: No, your Honor.
MR. LOMBARDI: No, your Honor.
THE COURT: Thank you.
And I would afford the defendants an opportunity to make interim argument. And the clock is running.

3500
MR. LOMBARDI: Okay, you had a chance to meet Harold Burnley who works in the manufacturing area at Philip Morris. This is one of the few opportunities you have had in this case to see somebody who actually does

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

the work as opposed to somebody who theorizes about the work.

He told you exactly why ammonia is used at Philip Morris. It isn't some expert who has come in and theorizes about why ammonia is used at Philip Morris. He told you why it is done and he told you honestly and in extremely straightforward fashion. He also talked to you about the NOD program.

The NOD process, we had testimony from Dr. Farone, the NOD process wasn't undertaken because it was too expensive. We have had testimony in this case that Philip Morris and the other industry companies would not undertake safer cigarette options because of some conspiracy.

Harold Burnley told you why they didn't use the NOD program. It was because there were little bugs who had waste product that made the tobacco smell bad. It was because these bugs couldn't be controlled. That's why the NOD process wasn't used. Thank you.

THE COURT: Mr. Coughlin.

MR. COUGHLIN: Ladies and gentlemen, when we

3501

started this case, and I hope I said it in opening and if I didn't I'm sorry, because I wanted to also point out, that literally there are hundreds, there have been hundreds of thousands of people that worked in this industry over the years that are good people. And we probably just saw one of them right there.

He came in and talked about the manufacturing process, and he talked about why he used ammonia and why he stopped the NOD program.

But what he didn't know, and what he wasn't aware of, is that there were other people in that same, in Philip Morris making decisions about the addition of ammonia as early as 1966, where they determined that they could control, the nicotine delivery can be

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

controlled via
the filler or smoke pH adjustment. And those are the
people that made the determination about the amount to be
added and the additives to be added. And they did it for
a reason over the years.
RJR found out about it and tried to copy them
with their cigarette. Why? Because nicotine and the
control of nicotine was tied to sales. And they were
doing that throughout the years, because we saw in 1994,
that they were taking a look at that same issue, and that
if they moved up the pH and they got more free nicotine it
had a more physiologically effective form.

3502

So there were certain people at Philip Morris
that knew exactly what was going on, there were tens of
thousands of other good people that work there in those
factories and every day work in those companies,
absolutely.
But the people that wanted to keep this thing
going, keep people hooked and not let them know the
information, they didn't let this information out to the
public and the public should have known that.
THE COURT: Thank you.
Would the defendant call your next witness.
MR. BERNICK: We would call Graham Read.

GRAHAM READ

called as a witness by and on behalf of the Defendants,
being first duly sworn, was examined and testified as
follows:
THE COURT: Would you have a seat and state
your name and spell your last name for the court reporter.
THE WITNESS: Graham Read, R-E-A-D.
THE COURT: Mr. Bernick.

DIRECT EXAMINATION

BY MR. BERNICK:
Q. Thank you. Good morning Mr. Read?
A. Good morning.
Q. Do you work for BATCo?

3503

A. I don't currently work for BATCo, no.

http://legacy.library.ucsf.edu/id/ovw05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. Who do you now work for?
A. I work for Rothman International, a UK tobacco based company.
Q. If you could?
A. I worth for Rothman International.
Q. And is that a recent development that you now work for Rothman?
A. Yes, it is. I joined them in the first of December, last year.
Q. Okay. Was that as a result of a transaction involving BATCo?
A. No, I simply left BATCo to go and work for another tobacco company.
Q. So you are now working for Rothman and you used to work for BATCo?
A. That's correct.
Q. And for how long did you work for BATCo?
A. Very nearly 23 years.
Q. Okay. Are you here to talk about research this morning?
A. I'm here to talk about research, biological research in particular, yes.
Q. In order to give the jury some background on yourself and what you are here to talk about, could you just review

3504

for them your educational background?
A. I guess where to start. I would guess I left school at -- in the UK we leave school around about the age of 16. I studied for another two years to gain qualifications, known as A levels, which are our pre-University entrance exams. So I joined University in 1968, at Hull University, and then I left Hull University at the end of that particular course, having received a degree in bio chemistry, to join the Leads University for a period of another three or four years, where I had a research and teaching post before joining BATCo in 1976.
Q. And Hull University, where is Hull located?
A. It is in the United Kingdom, and it's the northeast of the United Kingdom.
Q. Is that the area by the North Sea?
A. That's about it, yes.
Q. And Leads University, where is Leads?
A. It's in the north of England, but very much in the center of the country.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. After you completed your educational training, I believe you said you joined BATCo?
A. Yes, I did.
Q. And you were then there from 1976 until 1998 then?
A. That's correct, yes.
Q. Could you tell us just briefly the kinds of work and

3505

the kinds of activities that you engaged in while you were at BATCo?
A. Well, as a biological scientist, I joined them to work in their central biological sciences building. At that time the company was conducting a number of research studies which included animal inhalation studies. I worked in that department for approximately five years.
At one point in time I was head of the animal inhalation activities, I also had responsibilities for the biochemistry division. And I also undertook some other research activities on some special projects looking at metabolic studies. And then I left that department and went to another part of the organization on the same R and D side of South Hampton to work in the human smoking behavior group which I headed for, I think, again, close to five years.
Q. And what was your last position at BATCo before you left to go to Rothman?
A. I was the head of R and D for BAT holdings.
Q. Okay. Now, have you ever been testified at trial before?
A. I haven't. No, I haven't.
Q. First time?
A. Yes.
Q. I'm going to urge you again, it might be better if

3506

you move the microphone up a little bit and get a little closer. I want to make sure people hear what you have to say.
A. I appreciate it. The seat wasn't fixed to the ground, I'll move my body instead. Sorry about that.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

Q. That's quite all right.
I'm going to put up on the screen here, does this list the topics that you are going to talk about with us here this morning?
A. Yes, that represents the general outline of things I'm here to talk about, yes.
Q. Okay. Do all of these topics, from the top to the bottom, do they all basically relate to the area applied biological research?
A. Yes, they all have their origins and components in a blind biological research. Of course, there is some relation to fundamental research as well.
Q. When you say fundamental research, what is the difference between fundmental research and applied biological research?
A. Again, I'm sure all of us could perhaps give better definitions than myself. How I categorize it, I look at fundemental research on the basis of generating new and cutting edge knowledge. That knowledge is generated by expert scientists. And from that pool of knowledge one



would draw information, know how, technology, and actually apply that to some particular circumstance or requirements.
And in this case, in the relation of what I've been involved in, it's to look at the use of the product, the assessment of the product, and evaluation of the product with respect to the potential for product modification.
Q. Let's go over that for a moment. If someone is doing research in order to find out what really are the causes of a certain disease, is that fundamental research or is that applied research?
A. I would characterize that as fundamental research.
Q. If somebody is doing research to figure out how to change a product in order to sell it commercially, or improve its performance commercially, is that fundamental research or is that applied research?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

17 A. Again, in the context in which we are discussing it,
18 I would categorize that as applied research.
19 Q. Are you going to be talking with us this morning
20 about applied research or fundamental research,
21 principally?
22 A. Principally about a applied research as we undertook
23 it at BATCo.
24 Q. When we talk about applied research that was
25 performed at BATCo, are we talking about experiments that

3508
1 involved laboratory animals?
2 A. Yes, and other studies as well, of course.
3 Q. In what way can laboratory tests on animals be used
4 to provide information that might be relevant to what
5 happens to people?
6 A. Well, again, I'll turn the question back around the
7 other way and simply say, obviously, if we are trying to
8 make some assessment of either the constituent or product,
9 there would be no utility or no value in making that
10 assessment unless we could actually relate that to some
11 circumstance that had utility for the consumer, either in
12 smoking and health or in terms of the use of the product.
13 Q. How, do you go about the process of this as a
14 scientist trying to make sure that your laboratory tests
15 may ultimately have some relevance to people? How do you
16 relate those two as a researcher in the area?
17 A. Well, it's quite difficult for me to give you a clear
18 and unequivocal answer. But basically, what one is
19 attempting to do is to follow to continuum, involving an
20 unfolding knowledge. As it eminates from fundamental
21 research one draws know-how technology from that to try to
22 make some assessment and use of that knowledge.
23 With respect to this circumstances, I'm talking
24 about in respect of tobacco product use in relation to the
25 cigarette, and trying to relate its properties to its

3509
1 ability to elicit biological changes or

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

biological events
in a number of test systems.
Now, to have value, those test systems have to
have some relationship to what we consider to be the
issues and/or consequences for the use of the product by
the consumers themselves, by man.
Q. Is there a concept in dealing with laboratory tests
called validation?
A. Absolutely. There would be no point in conducting
a test that didn't have utility, and by utility, that's
what I mean by validation; what is it telling us? What
could we use that information for? And how can we apply
that knowledge with respect to the product?
Q. If you have a validated lab test, what does that tell
you about whether the test gives you information about
people?
A. I'm sorry, could you repeat that?
Q. If you have a validated lab test, what does that tell
you about whether that test can be used to understand what
happens in people?
A. Well, again, in terms of validation of the tests, the
test, when you develop the test you set some criteria. You
design it such that you hope it will give you useful and
valuable information. So in and of itself, in an
experimental circumstance you actually construct the test



to be scientifically valid in and of itself. And one has
confidence with that test, you then attempt to apply that,
and say, well, now I have a test, I believe I understand
what it does, it's reproduceable, it's reliable.
Now I'm going to try to relate its findings to
the significance for the purpose of which I'm conducting
the test, which happens to be is it having some impact in
the biological system that I can relate to man?
Q. Scientific acceptance, is there any relevance in
determining what lab tests to use? Is there any relevance
to looking around to the scientific community and see

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

whether the test is an acceptable one?
A. The simple answer, of course, is absolutely. There would be no point in developing a test that had no credibility or wasn't accepted or didn't conform with the current understanding of the science that was pertaining at that particular time that you developed the test.
Q. What kinds of lab tests have been used by BATCo, or by people who have performed laboratory testing for BATCo, in order to conduct applied biological research?
A. Well, in fact, we have examined and looked at many, many tests. However, I think I would broadly characterize them into three primary categories. These would be studies known as mouse skin painting studies; these would be studies looking at animal inhalation systems; and thirdly,

3511

we would be looking at things like in vitro test methodology.
Q. Are these all different kinds of test methodology that have been used over time also within the scientific community?
A. Yes, indeed they are.
Q. I would like to go through each of them and have you describe how it is that the test procedure was developed in the scientific community, and then how it was applied in the work that was funded by BATCo and by others. And I would ask you, have you prepared and used some time line charts in order to illustrate how these test methods were used?
A. Yes, I have.
Q. I would like to show you 7379, which I believe is a portion of the first one, and ask you whether mouse skin painting was one of the first test procedures that was used within the scientific community?
MR. KRISTAL: Object, your Honor, to the graph being leading at this point?
THE COURT: Sustained. Why don't you lay a foundation before you put the graph up there. Why don't you turn the graphic off.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

MR. BERNICK: I'll see if I can go back to the other one.

3512

When was mouse skin painting first used as a test procedure in the outside scientific community?

A. Mouse skin painting has actually been used for many, many decades, but its first real application for the purposes of looking at tobacco smoke condensate stem from the early '50's. Some of the work from Wynder and Graham, some of the primary studies that used that particular test methodology.

Q. Were there then a series of other studies that took place in the latter 50's and early 60's?

A. There frankly would have been a whole series of studies from in the 50's, into the 60's and 70's, and still today some regulators will call for mouse skin painting styles of tests.

MR. BERNICK: Your Honor, may I?

THE COURT: Yes.

BY MR. BERNICK:

Q. And again, does this time line indicate the timing of some of the significant publications that took place on mouse skin painting?

A. Yes, it's basically highlighted what I would consider some of the landmark papers on which were conducted in great detail and best effect and simply shows the period, certainly the origin, of when these test were applied to the use of evaluating tobacco smoke condensate.

3513

Q. Was this a test procedure that was developed by the tobacco industry, or developed by people outside of the industry?

A. This was clearly by people in the scientific community at large.

Q. Could you just describe briefly what a mouse skin painting test is?

A. Okay. Well, it's almost as it's described. Basically what one has, a series of animals, in this case mice, the backs of mice are shaved to expose the

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

skin.
Cigarette smoke condensate is collected from smoking a large number of cigarettes. The condensate is then taken into a solvent, that solvent, containing known amounts of tobacco condensate, is actually physically painted onto the backs of mice over long periods of time, and generally, but not exclusively, but generally over the lifetime of the animal, over two years, in most of the cases, to the mouse.
Q. What is the purpose of the test? What are you are you looking for in the test?
A. The purpose of the test is to gain a particular end point. One wishes to use the test for a purpose, and what one is hoping to develop is some biological response in response to the application of the smoke condensate to the mouse's skin. And generally it's looking at things like papilloma, being carcinoma, and tumors on the backs of



mice.
Q. Tumors on the backs of mice?
A. Yes, tumors.
Q. Now in using mouse skin painting for applied research, what was the basic idea in using mouse skin painting? What were you trying to find in using mouse skin painting for applied research?
A. Well, again, of course you have to set this into some context.
In the first instance, one was hoping to have a clear and validated test, as we were discussing earlier. And having got a clear and validated test, that it was responsive to the application of smoke condensate or fractions of smoke onto the backs of mice. One was generating an end point.
And the hope and expectation would be, and is, that you can get dose responses. You can then have the opportunity of using that research tool for looking at product modification and product modification strategies

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

and seeing if that had an effect on the instant of those tumors on the backs of mice which may be indicative of the events that were happening in the respiratory track of man.

Q. Let me see if I can at it. The idea was, if you make a change to the product and it performs better on mouse

3515

skin painting, that might indicate a direction for improving the product?

A. Potentially, yes, taken in isolation, that one has to put in a number of biological and scientific caveats, but in principle that's what one would hope to do.

Q. I want to talk to you now about who went ahead and did applied research using mouse skin painting. And let's begin with research that was done in Britain.

Was research done in Britain that took this technology and tried to use it to experiment with changing the product?

A. Yes. In the middle 50's, in effect, a consortium of UK based tobacco companies came together as a unit and actually decided to fund research. And they created what was known as the Tobacco Research Council. That Tobacco Research Council set up it's own research laboratories, and they came into being in about 1962, I believe it was.

And some of their first challenges was to look at and to develop and to validate the mouse skin painting model as a potential tool to the steer product modification.

Q. What about BATCo? Did a time come when BATCo started to fund and conduct mouse skin painting research for applied purposes?

A. Yes, it did. And again, that was more towards once

3516

it was gaining basic knowledge about how the test performed through this industry consortium, it then took a decision of itself that it wished to fund specific research in these

http://legacy.library.ucsf.edu/tid/ovr_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

areas. And I think they funded a contract research laboratory known as the Frankfort Batelle Research Institute, and that began in the 1960's, about '66, I think it was, and ran right through until the early 80's.

Q. What about in the United States? Was there any applied research that was conducted using mouse skin painting here in this country?

MR. LOMBARDI: Objection, no foundation?

THE COURT: Overruled.

A. Yes, indeed, there was. There were parallel activities all around the world. Again, I don't see much distinction as to the US or UK.

But to complete the story, the National Cancer Institute had a subdivision known as the Tobacco Working Group, and they undertook and commissioned and developed their own mouse skin painting tests, test methodology, again as a means of trying to assess the properties of the product to help get some steer with respect to changes and improvements in the product with respect to biological properties.

Q. Showing you Exhibit 7380. Does this now give an overview of the progress of the external research, and then



the three major areas of applied research that you just referred to?

A. Yes, it does, to the best that I can read it, yes.

Q. The TRC, was that the consortium sponsored research in the UK?

A. The Tobacco Research Council, yes.

Q. And then we have BATCo B and W again in 1966, and National Cancer Institute Tobacco Working Group in 1968?

A. That's correct, yes.

Q. And we roughly captured the periods of time in which this applied research was done?

A. I think that accurately reflects it, yes.

Q. With regard to the BATCo program, were there a series of projects that were undertaken through a project called Janus?

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

A. Indeed you have eluded to that project. There was a very full and thorough program with respect to mouse skin painting where people looked at, or wished to look at, the whole array of cigarette design variables and properties and to assess them within the mouse skin painting studies.
Q. Is there a chart that indicates in summary fashion all the different parts of Janus?
A. Yes, there is. It lays out the time line, the projects by name and number, and identifies, to the best of my memory, that it actually identified what was looked at

3518

in those series of studies.
Q. Showing you Exhibit 87831, is that kind of an overview of the project Janus and the reports that came out of that?
MR. KRISTAL: Same objection.
THE COURT: Sustained.
MR. BERNICK: Can I approach the side bar briefly.
THE COURT: I understand. You just have to elicit testimony from him before you put the document up, the testimony that would tend to support the document.
MR. BERNICK: I'm sorry.
THE COURT: Testimony that would tend to support the document, otherwise it's leading.
BY MR. BERNICK:
Q. It may be at tab 7 in your book. And let's do it this way. Maybe that's an easier way?
MR. KRISTAL: Your Honor, I would have the same objection.
THE COURT: Let me ask counsel to quickly approach.
(The following discussion was conducted at the side bar between court and counsel, out of the hearing of the jurors, as follows:)
THE COURT: If you wanted to refer him to a

3519

document, give him something to refresh his recollection,

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

that may be a more appropriate way to do it. I just don't want to put the document up, because I think it is leading. So if you want to refer him to a document.

MR. BERNICK: That's all right.

THE COURT: For his benefit, I think he can do that.

MR. KRISTAL: I don't want to jump up; are you saying the document being the demonstrative --

THE COURT: Well, the demonstrative, I've asked counsel not to put it up before he has --

MR. KRISTAL: But the witness can refresh his recollection.

MR. BERNICK: I have them in a notebook, that may be the easier way to do it.

(The following proceedings were conducted in open court.)

BY MR. BERNICK:

Q. Do you have a tab 7 there, Mr. Read?

A. Yes, I do.

Q. And does tab 7 set out a chart that indicates the different parts of Project Janus and the timing of those different projects?

A. Yes, it's does.

Q. And is that a summary or summary overview of Project



Janus?

A. In fact, it's a complete summary of the project profile, yes.

Q. On that basis, then, I want to display it for the jury, Demonstrative 7381. And does that basically indicate what it is that you have been talking about here with Project Janus?

A. Yes? That's correct, yes.

MR. KRISTAL: Same objection.

THE COURT: It's still a bit leading. Why don't you ask him to refer to the documents if he wants to refresh his recollection, and ask him specific questions about various parts of this. And if he needs to look at the document to refer to what time periods they were in, but I think you need to lay that foundation before you

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

simply put the document in.
MR. BERNICK: Okay, try it one more time.
THE COURT: Does that make sense?
BY MR. BERNICK:
Q. With respect to Project Janus, does that document that is Exhibit 7381 refresh your recollection about the specifics of when the first parts of Project Janus began and when the final conclusion took place?
A. Yes, it does.
Q. Roughly, how many parts were there to Project Janus,

3521

as you recall, based on that document?
A. There were 14 projects conducted in that study and series of studies.
Q. Is this document an accurate summary of the different parts of Project Janus, as you recall?
A. Yes, it is 1679.
THE COURT: No, I'm going to let you do it even though we'll have some discussion about it later, but go ahead and do it. It's easier just to have it done.
BY MR. BERNICK:
Q. Okay. On that note, I would like to turn now to talking a little about it about mouse skin painting as a research technique.
A. Yes, sir.
Q. Were there any limitations that came to be understood regarding mouse skin painting as a test method?
A. Yes, of course, there were limitations right from the outset. But to be fair, and to be frank, obviously when one tries to make some assessments, you attempt to live within some of those limitations, clearly mouse skin isn't the same as the respiratory track tissues, not the same as the lung.
Q. Okay.
A. And, of course, one is looking at condensate, which again clearly isn't whole smoke, it's been through the

3522

collection processes, extraction, solvent process, and applied to the backs of the mice.
Q. When you talk about condensate, what is

http://legacy.library.ucsf.edu/tid/ovp05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

condensate?
A. Simply stated, if you imagine a filter pad and you take the smoke aerosol and draw the smoke aerosol through the pad, you take out of it particulate material and allow the many gaseous components to pass through.
Q. Gas?
A. Gas, sorry.
Q. So you now have the particles that have collected on the filter. What do you do next?
A. You then wash it off with a solvent, an organic solvent, so you solubilize it, and then you have to standardize it for the same amount of condensate, or on the weight basis. So every time you treat the mouse, if you are looking at two different condensates, you are applying the same amounts so you could look at their qualitative differences, what we term specific activity.
Q. Is the condensate that's painted on the backs of mice, is it more or less concentrated in these particles than what actually occurs in the smoke?
A. Well, of course it's much more concentrated and of course the amount that you apply to the back of the mouse is in relative terms enormous amounts of condensate.
For the purpose of trying to maximize a

3523

response, what one is trying to do is elicit a response, because unless you have a response you have no foundational basis for actually comparing one condensate type with another.
Q. Or one design with another?
A. Or the variables that go into producing condensate of specific activities with different qualities, as I say.
Q. What about the fact that it's painted on the back of the mouse instead of being involved with the lungs. What significance does that have?
A. There are a number of factors, but some of the key ones are, of course, the lung has a number of defense mechanisms. The lung is designed, developed to interface

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

14 with the outside world. We draw air into our lungs and we
15 exhale again, expire, meant to exhale. And of course we
16 are being exposed to a whole array of environmental
17 chemicals and particles and dust.
18 And the lung is designed through a thing known
19 as cilia, which are like little fingers in the conducting
20 airways that move mucous through the lung. So when
21 particles deposit on the surface of the mucous they are
22 simply flushed from the lung -- it's not fully
23 understood -- that those parts are flushed up, and we
24 swallow them, they are cleared out through the lung, taken
25 out through the airways, and we swallow them through the

3524

1 normal processes of swallowing.
2 Q. I want to show you, this is Exhibit 3783, this now
3 summarizes some of the considerations that you just recited
4 about the limitations of mouse skin painting?
5 A. Yes, it does. I spoke about the differences between
6 skin tissue and lung tissue. I indicated that there are
7 different defense mechanisms. I spoke about cilia and the
8 mucous coating. I didn't mention microphages, these are
9 another cellular technique that are free roaming cells in
10 the lung that simply engulf particles as parts of the
11 detoxification mechanisms that are present inside the lung.
12 Again, as I indicated to you, the cigarette
13 smoke condensate is not the same as whole smoke; very much
14 different from that. And again, as we said, it's being
15 applied at much higher concentrations, because it's a
16 toxicity test, we are trying to maximize a response and
17 have an end point.
18 Q. I want to take you back for a moment to the time that
19 we had with mouse skin painting and direct your attention
20 up to the upper left corner where you talk about the people
21 who originally developed mouse skin painting, the outside

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

22 scientist.
23 A. Yes.
24 Q. Did a time come when some of those same scientists
25 began to express the idea that maybe it was time to develop

3525
1 a new technique for measuring biological activity?
2 A. Yes, if I could quickly add in that obviously science
3 doesn't move in giant steps, it tends to be a continuous
4 evolving unfolding series of knowledge that we gain. And
5 throughout this period, which is a long period, as you can
6 see on that time line, there were other thoughts, other
7 ways of looking at the problem.
8 We are getting better understanding of the
9 fundamental scientific level of what we understood about
10 disease and disease processes, and in parallel with that
11 was the recognition that using things like animal
12 inhalation systems, or the inhalation system in general,
13 might be a more applicable way of conducting this sort of
14 assessment.
15 And when Wynder, together with his colleague,
16 Hoffman and Wynder actually published a book of where they
17 actually brought to the attention of the general public
18 some of their concerns regarding the limitations of mouse
19 skin painting tests and the possibilities of using other
20 tests assays if they could be validated as being
21 demonstrative of actually representing that which is
22 happening in the human.
23 Q. Showing you an excerpt from GC 2.
24 Is this the reference that you just talked to
25 us about?

3526
1 A. Yes, it is.
2 Q. Okay. It says, the bio assay for tobacco products on
3 mouse epidermis, is that the same as mouse skin?
4 A. That's mouse skin to me, yes.
5 Q. Have not answered questions on the problem of
6 respiratory carcinogenicity?
7 A. Yes.
8 Q. A bio assay on the system of a laboratory animal

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

should be useful, provided that sufficient smoke aerosols can be delivered to the bronchial epithelium.

What's the essence of being said here?

A. I'll translate that question. As we discussed here, they recognized and openly admitted that the mouse skin painting test was an approximation to try to get some measure of the biological properties of condensates.

They also recognize the lung tissue would have been a better site to which to apply the smoke and smoke aerosol, and it would be a better test model if indeed you could demonstrate, as I was saying earlier, you could validate its use.

Could you achieve that in practice? And does it have utility with respect to measuring the biological properties of whole cigarette smoke?

Q. Inhalation techniques or inhalation studies were their inhalation studies that were again being done by a



scientist outside the tobacco industry?

A. Yes, there were.

Q. How far back about did those go?

A. Again, as I said earlier, the scientist continuum, and there were many respiratory studies trying to look at animal inhalation and inhalation model, stem back even to the 30's, 40's, 50's. They were fraught with all sorts of limitations and difficulties.

Q. Did a time come when this other technique, animal inhalation, came to be used for applied research on cigarette design?

A. Yes, it did.

And again, I would like to indicate that as one test methodology was in operation, people were looking and thinking about additional test methodology by supplementing, supplanting or enhancing those test protocols. And inhalation studies were beginning to come into being probably in meaningful terms in the mid-60's.

Q. Okay. In the United Kingdom, who used inhalation

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

test methods in order to look at the potential design modifications?
A. Well, in the first instance, certainly the Tobacco Research Council, through its Harrogate Laboratories, the Harrogate Laboratories, they were looking at an ability to try to develop inhalation models and inhalation exposure

3528
systems. And certainly BATCo was looking in and of itself through external contract groups, and subsequently looked internally and set up an animal inhalation facility of the sort that I joined in 1976 when I joined the company.
Q. What about in the United States? Were there any groups that were doing inhalation studies in the United States?
A. There were many, many groups looking at independent researchers, also the NCI was also looking at developing an animal inhalation exposure system.
Q. Turning to tab 11 in your book. Does tab 11 give you the details of the timing of some of this research?
A. Yes, it sets a matrix that looks at external research and some of the key researchers, many which -- which there were many, many more than shown here.
And it interposes the work the industry did, and that which BAT BATCo did in and of itself and others, of course.
Q. And based upon your analysis, does it accurately set forth the time periods that this research covered?
A. I think the timing is absolutely accurate, yes.
Q. And would it help the jury in understanding what that time sequence is to show the chart?
A. It's a little busy chart, but I think it could be helpful, yes.

3529
MR. BERNICK: We would like to display the chart, your Honor.
THE COURT: Unless there is some objection, go

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

ahead.
BY MR. BERNICK:
Q. This is Exhibit 7387. And again, does it give you the basic time periods of the external research, the TRC, Tobacco Research Council of the United Kingdom, BATs and NCI-TWG here in the United States?
A. Yes it does. As I said, it's busy, but it has the time line at the bottom, which I think is key, stemming from the '50's right through to the present day. And it also sets out the external research. Individuals have conducted that research and how the industry and industry groups actually interpose their own activities between those two.
Q. There is one at the bottom called MAI. Could you tell us what that refers to?
A. That refers to Microbiological Associates, Incorporated, I believe it's incorporated. This was an external contract research laboratory which was contracted to undertake animal inhalation studies for and on behalf of the CTR.
Q. Were you familiar with how that work was administered or only familiar with the research that got published as a



result?
A. I'm familiar with the research that was published, but not the detail prior to that.
Q. We talked a little bit about considerations or limitations that applied to mouse skin painting. Now that we are over in the world of inhalation, were there limitations that arose in doing inhalation work?
A. Yes, indeed there was.
Q. Could you explain what some of those limitations were?
A. Again, I'm beginning to sound like a boring scientist. There are some concerns and there were issues. If you can imagine that animals don't normally inhale cigarette smoke, so we have to put them through some particular constraint situation, whether to hold them and constrain them, present smoke to them, or in some

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

instances
people have actually tracheotomized animals, put pipes down
their throats and forced smoke into their airways. There
was a whole different array of generating smoke.
Some people have generated a quantity of smoke
and put it into the animal cages. The animals, the first
thing they do is run to the corner of the cage, they
actually lay on top of one of another and simply try to
avoid inhaling cigarette smoke.
So there is a whole array of difficulties if

3531
you want to conduct meaningful, controlled and validated
studies. There is a huge amount of challenges in actually
putting those exposure systems together in a way that
minimizes the stress to the animal and maximizes the
potential to get a reproduceable result in the respiratory
system.
Q. Did the Surgeon General of the United States come to
recognize some of the limitations on doing inhalation work?
A. Yes, he did.
Q. Was that in the 1982 Surgeon General's report?
A. That's my recollection, yes.
Q. Turning to tab 13 in your notebook, do we have an
excerpt from the Surgeon General's report which relates to
this?
A. Yes, we do.
Q. We have now displayed on the screen some of the
language on the 1982 Surgeon General's report that deals
with some of the limitations of inhalation work.
A. And, in fact, what the Surgeon General here was doing
was looking at not only the practicality of exposing
animals, he's also looking at the lack of actual
responsiveness in those animals' systems to the exposure
your to smoke.
Q. In lacks of responsiveness, what was the problem
being identified?

3532
A. Basically, with a few exceptions, most

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

people are
unable to actually generate bronchiogenic carcinoma in the
respiratory tracts of these animals, in these animals in
Hasselback's studies.
Q. And is bronchiogenic carcinoma one of the forms of
disease that people get who are smokers?
A. That's correct.
Q. So were they able to replicate in the laboratory what
was happening to people on a consistent basis?
A. Certainly they weren't able to demonstrate and have
clear end point for carcinogenic bronchiogenic carcinoma --
sorry.
Q. Let's talk about chapter 3. Was there a new series
of test methods that came to be used for purposes of doing
applied research? I know there are time issues.
A. I have to say yes to that, but you have to put it
into a time continuum. No one test stopped and another one
started. There was a considerable overlap.
And in the world of toxicology and regulatory
toxicology, what tends to happen, people tend to build a
body of knowledge; they accept the limitations of one test
while trying to introduce new tests; that again, to
minimize those limitations.
But if we are now around about the early 70's,
we are right on the threshold of getting some

3533

understanding of genetics and genetic principles. So
people are going to look at these known as in vitro tests,
which were beginning to get right down into the real
biochemical detail, the real genetic detail of trying to
understand how, not whole smoke necessarily, but
components in smoke are specifically interacting in
metabolic systems and with macro molecules in the cell,
the genetic material, the DNA.
So that's where we are in terms of this
discussion here.
Q. Was there a particular test method called the Ames
Test that came into existence during this period of time?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

13 A. Yes, in the early 80's the Ames Test or Ames assay
14 came into being.
15 Q. Was the Ames Test a test that actually looked for
16 cancer?
17 A. No, it wasn't.
18 Q. What was the Ames Test actually looking for in these
19 laboratory tests?
20 A. Again, I hope you forgive me, I am not trying to make
21 the position complicated, I'm trying to present it as
22 simply as I can. It was a micro organism, a bacterium.
23 Bacteria have very simple genetic structure; they are not
24 like mammalian structures.
25 THE COURT: Mammals.

3534
1 A. Thank you. Not like us.
2 Now, what had happened with that particular
3 assay, Bruce Ames had actually developed an organism that
4 had it's genetic material manipulated, such that it
5 couldn't grow without a growth supplement.
6 Now, in treating it, that organism, with
7 chemicals, it then would either have the ability to grow
8 or not to grow. These are called reverters.
9 So what was really happening was the chemical
10 was interacting with the DNA of the micro organism and
11 overcome the error that had been built into it, and so
12 that's what's known as mutation. It changed an event and
13 allowed it to grow, and that's pure and simply what the
14 test was about.
15 Q. This was a test for what is called mutagenicity?
16 A. That's absolutely correct, yes.
17 Q. Was there felt to be some relationship to
18 mutagenicity and actual cancer?
19 A. Again, at that time, yes. Because, of course, as I
20 indicated to you, we were right on the threshold of
21 beginning to understanding genetics and the birth of
22 molecular sciences. So basically people are saying yes, I
23 think this means the same, or it might mean the same; if
24 I've got something that might be mutagenetic, it might be

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

carcinogenic.

3535

Q. The Ames Test, was that developed by the tobacco industry?
A. No, it wasn't.
Q. Who was it developed by?
A. Bruce Ames.
Q. He was a professional researcher in the industry?
A. Yes, in the U.S.
Q. Did there come a time when applied biological research on product modification was done using the Ames Test?
A. Yes, there was.
Q. Did BATCo do any such research?
A. Yes, it did.
Q. Does it continue to do such research today?
A. Yes, it does.
Q. You mentioned the National Cancer Institute tobacco working group program. Did that come to encompass the Ames testing?
A. Yes, it did.
Q. Now, the tobacco working group program of the National Cancer Institute, was there any role that the US tobacco companies played in connection with that program, as you understood it?
A. Again, to the best of my understanding, it was a little bit like the Independent Scientific Committee that

3536

we had in the UK. The industry experts were invited to participate and give ideas, thoughts, and administer to some of those programs.
Q. We talked a little bit about the Ames Tests. If we could go back to an earlier period of time, are there other in vitro cell oriented tests that again had been used to do product modification research?
A. Well, certainly tests were developed and evaluated with the potential for use on product modification. But not always used because identified limitations. Now they would be these like cilia stasis test.
I said to you before, the lung mechanism is to actually flush the mucous from the lung and

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

remove
particles from it, as a general process of clearing the
lungs on a day-to-day basis. So any inhibition of the
ciliary activity can cause a limitation on cause and
effect. Some people look at cilia stasis as measuring the
biological effects of smoke.
Q. Turning to tab 14 in your book. Does that again
reflects the basic timing and studies, both by the outside
scientific community and by the TRC, BATCo, and the NCI-TWG
using in vitro technology?
A. Yes, it does.
Q. Would that assist the jury in understanding the
timing of some of the work you have now described in

3537
general?
A. I hope it will. Again, this is -- perhaps it is a
busy slide, but it does reflect intense amount of research
activity that was taking place in this arena at this
particular time period that we are looking at.
Q. Showing you Demonstrative 7388. Is this, again, a
similar time line presentation, a little more busy?
A. Yes, it is.
Q. Did the time come, or was their recognition of
limitations even on the in vitro work?
A. In certain circumstances, yes.
Q. Could you describe what some of the limitations were?
A. Well, again, if we look, for example, we look at
cilia stasis, when you pass cigarette smoke over excised
tissue that have cilia on them that are normally moving,
you can actually cause them to stop. That is the cilia
stasis effect. And that can be shown in vitro.
But certain studies were conducted around about
that time with humans where they put regulated particles
in the lung, where the cilia are physically working, and
it is an in vivo situation. And they clearly demonstrated
that in cigarette smokers, it was no impairment whatever
of the ability to flush these radioactive

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

particles from
the lung.
So you have on the one hand an in vitro, the

3538
situation that was acutely responsive to the gas phase of
cigarette smoke; and on the other hand you have the real
life situation, where the test experiments that you are
conducting shows that there is no impairment to the cilia.
So it's back to validation.
And because of those sorts of observations, the
utility and the value of cilia stasis tended to fall away.
So it ceased to be of value, and not used by external
researchers, and not used by ourselves towards the end of
the 60's.
This is where people were beginning to say, we
don't think these are appropriate tests; they are not
giving us real information and they are certainly not
allowing us to go enter into a product modification
program based on these fundings.
THE COURT: Is this an appropriate?
MR. BERNICK: Absolutely perfect.
THE COURT: We'll take a break for about 40
minutes. At 20 to 1:00 be back in the jury room. I would
ask counsel to remain for a minute. Same rules apply.
Don't talk about the case among yourselves nor with anyone
else. Don't form any opinions or express any.
- - -
(Luncheon recess.)

3539
TUESDAY AFTERNOON SESSION, MARCH 9, 1999.
THE COURT: If you will retake your seat, and
I'll ask counsel for Brown & Williamson to continue.
MR. BERNICK: Thank you, your Honor.
Q. Good afternoon Mr. Read?
A. Good afternoon.
Q. Good afternoon ladies and gentlemen.
Mr. Read, I now want to go to the question of
publication of some of the research that you have
discussed. But before I do that, let me ask you, we have

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

been talking about applied research, which I think you have described as relating to the product. Was there any funding that took place by BATCo of fundamental research?

A. Yes, indeed there was.

Q. Could you just give us a brief overview of the kind of fundamental research that BATCo funded?

A. Well, that would fall into a number of categories. Throughout our research history, numerous people came to us and asked for support regarding the knowledge that we had with respect to the product, and we would lend equipment, we would give advice, we would lend product, we would make products to people's specifications, we would seek to support independent researchers that had common interest with ourselves, and we supported many people over the

3540

years, and we had a specific program known as the Scientific Research Group that had the specific remit of monitoring the external world of science and, where appropriate, identifying areas of research that we felt either our funds or our knowledge would materially add to their programs or their advancement.

Q. Okay. Turning to tab 17, which is exhibit 7391, does that give a list of the different categories of research that were funded by BATCo, fundamental research that were funded over time?

A. This actually shows a mix.

Q. Okay.

A. It's a mix of fundamental research on the top line showing the SRG, Scientific Research Group was very much in evidence in 1985 and is still in operation today. We gave money in a cooperative relationship with the government, the Tobacco Product Research Trust, which is the next line looking at '82 through '96, that was some 8 million pounds, something like 12 to 15 million dollars. Again, showing throughout the whole of PAT's research history from 1960 right through to the

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

90's, we
22 have a whole plethora of programs that we supported, and a
23 whole array of researchers that we supported over the
24 years.
25 Beneath that you can see the Tobacco Research

3541
1 Council. The tobacco manufactures standing committee was
2 an administrative body that led to the TRC. And prior to
3 that, the industry, within the UK, funded specifically the
4 medical research council with a grant of a quarter million
5 pounds in I think right around 1954.
6 Q. Have publications resulted from the different
7 activities of research, different research activities that
8 you have described here?
9 A. Yes, there have been publications from any and all of
10 those studies across that whole spectrum.
11 Q. Directing your attention to tab 18 in your book,
12 Demonstrative 7392. Could you describe for us in just
13 general terms the magnitude of the publications that have
14 come out of these different research activities?
15 A. Again, we need to break them into 2 categories; those
16 which BATCo in and of themselves specifically funded, and
17 from '56 through to '97 we have a documented record of the
18 over 500 scientific publications that have been put into
19 the public domain, principally through peer review
20 journals.
21 And the second category, which was jointly
22 funded research, either by ourselves and other members of
23 the UK tobacco industry, or indeed other members of the
24 tobacco industry throughout the world, spanning from '58
25 through to '96 does assume a number in excess of 500

3542
1 scientific publications that have been put into the public
2 domain.
3 Q. Has a log been prepared, a listing or a log been
4 prepared of publications by BAT group scientists over the

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

years?
A. Yes, there has.
Q. Turning to tab 19, is that the log?
A. That is the first page of many pages which lists the output of 500 publications, yes.
MR. BERNICK: For the record, your Honor, the entire log is GF 000019-A.
Q. And does that log list or summarize the BATCo publications, the BAT group pup publication.
A. Yes, by year and title, and all that.
Q. To just give a flavor, is what we have up on the screen here the first page of the log that appears in your book?
A. Yes, it is.
Q. Okay. Likewise, turning to tab 20 of your book, is there also a log of publications that have come out of the TRC and the TAC?
A. Yes, there is.
Q. Okay. And is it --
MR. BERNICK: Your Honor, GF 000019-B is the entire log.

3543

Q. Again, is that a log that has been prepared that reflects publications by the TRC?
A. Absolutely, yes.
Q. With respect to the TPRT, which are one of the lines on the chart, is there a book that was published that reviews different kinds of research that have come out of the TPRT?
A. Yes, that refers to the Tobacco Product Research Trust, which was administered by an external chart, but chaired by Sir Peter Froelich, the former independent scientific committee chairman.
At the instigation of the UK government he administered those funds, and there is a complete list of and record of publications from those 37 studies they supported.
Q. That would be at G 300050. And finally, with regard to projects funded by SRG, or Scientific Research Group, is there a page, a log at tab 21 of your book that records all those publications?

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. Yes, there is.
MR. BERNICK: And that is GF 00019-B.
Let me turn to another subject that -- I guess we'll go back to the first listing that you gave us here.
We have talked about the purpose of applied biological research and the evolution of applied biological research

3544

at BATCo and elsewhere?
I want to turn now to the claim that the defendants controlled the evolution of biological research. But before we get into the details of this, I want to ask you a couple questions about BATCo research, in particular, that we have been through this morning.
Are you familiar, have you become familiar, during the course of your testimony and deposition, that from time to time there would be lawyer commentary or lawyer discussions regarding the scientific program?
A. Yes, I have become aware of that.
Q. Based upon your own experience, Mr. Read, are you aware of any research that was part of this program that BATCo scientists wanted to perform but that was not performed for any reason other than their scientific judgment?
A. Categorically not.
Q. Are you aware of any research that was in some fashion changed as a result of legal reserves?
A. I have no experience of that whatever throughout the 23 years I have been with the company, or was with the company.
Q. Are you aware of any significant -- from time to time as the research reports were done at BATCo, did they become distributed to the different organizations that comprised

3545

the BATCo or the BAT group?
A. We had a very rigorous process out of our research center in South Hampton where documents were produced, records, distribution lists, identified documents,

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

and were
distributed throughout the world with BAT.
Q. Are you aware of any significant collection of R and
D reports that came out of the South Hampton research
program that did not ultimately make their way to their
designated locations around the world, including Brown &
Williamson?
A. I'm not aware of that.
MR. KRISTAL: Foundation, your Honor.
THE COURT: Sustained, disregard the last
question and response.
BY MR. BERNICK:
Q. Mr. Read, was there an ordinary practice that was
followed in connection with the distribution of reports?
A. Yes, there was.
Q. Were you familiar with that basic procedure that was
followed with regard to distribution of reports?
A. Yes. In fact, I was responsible for it as part of my
responsibilities with the company.
Q. Based upon what you knew, and your own involvement in
that, are you aware of any significant collection, R and D
reports that did not make their way to destinations around

3546
the world as designated, including Brown & Williamson?
A. I'm not aware of that at all.
Q. Has that fact been audited?
A. Yes, it has. There has been an audit conducted in
that contrary.
Q. Throughout the period of time that you were involved
in this scientific research program, were you aware of any
biological or scientific work that BATCo wanted to do, to
your knowledge, but that wasn't done as the result of a
request made by another competing tobacco company?
A. I'm sorry, would you mind just repeating take
question.
Q. Sure. During the course of your work on biological
research at BATCo, are you aware of any scientific research
that BATCo wanted to do, but that it didn't do because it
received a request from a competitor or competing tobacco

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

company?
A. Absolutely not.
Q. Let's now go to the issue that claim that the defendants controlled the evolution of biological research.
Are there certain matters or certain facts that you have looked to in determining or answering the question whether the defendants controlled the evolution of biological research?
A. Well, the simple answer to that is, yes, I have.

3547

Q. Okay. And what kinds of factors did you feel were significant in determining whether anybody could control the overall evolution of biological research?
A. What I think was partly answered, and certainly clarified in my own mind, I lived it for 23 years, I never felt at any point in time we were controlling or being controlled in any shape or form.
But equally, when I put the time lines together for external research, research literature, I was monitoring, as part of my activities when I was a bench level scientist, I was reading, responding to external scientists and conducting internal research. My whole testing experience is one of the research center at South Hampton, was often referred to as the University of BAT. We operated like a University, we were really very open. We involved ourselves in discussions with many external scientists.
When people asked us specific questions, we shared our information with them, provided it wasn't of a commercially sensitive nature, and it worked like the University of BAT.
Q. Let's focus on the test methodology that were used in research. You talked about the test methodology this morning?
A. Yes, I have.

3548

Q. The test methodology that were used, were

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

they some
secret that was known only to BATCo?
A. Well, clearly not. I think when I put up the time
lines you can see that we were picking up and responding to
fundamental research, other people's ideas.
We took those ideas, we looked at them within
the context of our own needs and requirement for our
product and our industry, and where we developed
additional information we readily shared that with
external researchers.
Q. The when you have that kind of exchange, is there,
does the term a marketplace for ideas have any meaning to
you?
A. Yes, I suppose it has. But from a scientific
standpoint, my marketplace is the international
marketplace, it is the world of science, which is reflected
in the body of published science because, of course, peer
review journals contain learned information. We were
listening, we were responding, and we were using that
information.
Q. Let's talk about those journals. Are there journals
that are published here in the United States on tobacco
research?
A. There were many, many journals there is a huge
exhaustive list of journals.

3549
Q. If we take a look at tab 24, is that a compilation of
a list of international journals on smoking and health?
A. Well, of course it's our list, and I have cut it
down. I recognize that. Every one I look at I recognize
without spending time going through every single one.
Q. I guess that's not very helpful, is it?
A. You can see my problem.
Q. Let's see if we can pick out, that's even less
helpful. Let's go on to another one. It's so small I
can't see it. I don't know if it shows up on the screen?
A. Would it help if I read off 102.
Q. Even simpler, in order to expedite this, if you want

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

13 to give us the rough idea of the scope of international
14 journals that publish in this area; can you give us a rough
15 idea of what we are talking about?
16 A. It must be several hundred.
17 Q. What about the International Tobacco Manufactures
18 Associations? Are there associations only in the United
19 States or are there associations abroad as well?
20 A. There are many tobacco manufacturers associations.
21 The ones that I'm most familiar with and have actually
22 conducted research of the nature of the Tobacco Research
23 Council that I am familiar with, there are at least 5 or 6
24 of those.
25 Q. Could you tell us what some of those associations

3550
1 are, and where they are located?
2 A. There is the Canadian Tobacco Manufacturers
3 Association, there is the German Flaband to the cigarette
4 industry; there is one in Switzerland, an eminent Tobacco
5 Manufacturers Association; and there is one, of course, in
6 Australia.
7 Q. Are there international conferences that are held in
8 the area of tobacco research?
9 A. Yes, there are.
10 Q. And could you give us some examples of the kinds of
11 conferences that are held?
12 A. In the field of tobacco research, and smoking and
13 health, there are many, many expert conferences that occur
14 throughout the world to which we and other scientists have
15 contributed. But on an annualized basis there are two
16 specific groups that -- I'm sorry, not on an annualized
17 basis, on a two year rolling basis.
18 The Cresta organization, which is, an that is a
19 body that represents the world's tobacco industry. There
20 are some 1900 members of that organization, and it is
21 there to share science with respect to tobacco, the
22 product, and analytical procedures and smoke technology.
23 And they hold a Congress every two years to which it is

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

open to the general public, and it usually has anything up
to 200 papers presented at that particular Congress.

3551

And there is the Tobacco Chemists Research
Conference, which is held annually, which is a subset of
the American Cancer -- I'm sorry, American Chemical
Society activities.
Q. Are there conferences that are held from time to time
that include not only members of the tobacco industry, but
other experts in the area?
A. Yes, there are.
Q. I want to show you what already had has been displayed for the jury in part as AS 000208, it is a
Canadian conference on cigarette modifications. Are you
familiar with this conference?
A. Yes, I am.
Q. And if we take a look, I think it's at tab 28, does
this give biographical sketches of some of the people who
showed up?
A. I think this -- my papers are out of order, if I
could just look at this and I'll give you my view.
Q. Okay. This list here, we have heard from Dr.
Benowitz in this trial, Dr. Hoffman -- is doctor Hoffman an
outside scientist who has done research in the area of
tobacco design?
A. Yes, he is from the American Health Foundation.
Q. Are there also people who attended this conference
who were scientist with tobacco companies?

3552

A. Yes, of course. I recognize David Townsend's name, I
recognize Patrick Dunn's name, of course.
Q. What about Dr. DeBethizy?
A. Yes, he's from R. J. Reynolds, I understand.
Q. And Dr. Koslowski, is he with the tobacco company or
outside scientists?
A. He's an outside scientist.
Q. Are you familiar with the Banbury conference?
A. Yes. I've obviously read the reports from the
Banbury conferences.
MR. BERNICK: And that's AS 000115.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

Q. Is that the first page of the Banbury report?
A. Yes, that's the first page, yes.
Q. And again, going to the participants, was that another conference that included not only scientist from tobacco companies, but a whole series of academic and research organizations?
A. Clearly, it is because, of course, their activities are made behind their names.
Q. Has BATCo sponsored participants not only from the tobacco industry, but outside research organizations?
A. Yes. The one that comes to mind is the smoking behavior conference in 1979.
MR. BERNICK: This is at GK 000175.
Q. Is that the cover page?

3553

A. Yes, edited by Thornton, that's correct, yes.
Q. And again, turning to the page of participants, do we have people who are both from tobacco companies as well as from outside research organizations?
A. Yes, we do.
Q. Let's talk a little bit about some of the other factors that you looked to.
Have you looked also to the question about the scope of research that's been published in the area of smoking and health?
A. Yes, I have.
Q. Okay. Have you prepared a chart that records the overall volume of research on smoking and health that's been published?
A. Yes, I have.
Q. And if I could get that, that's a tab?
A. Of course. My moment's hesitation is I don't normally count the papers that I look at in the course of my business. I have looked at many hundreds and thousands of papers, but, yes, I have compiled a number for the purposes of this activity today.
Q. If you take a look at tab 31, does that chart reflect information on the overall scope of published research?
A. I would suggest that's a conservative estimate, yes.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

25 Q. And the source of information that appears on that

3554
1 chart, what are the sources of information that appear on
2 that chart?
3 A. There are really two principal sources of
4 information. In the early years, from '61 through to '77,
5 it's the work of Larsen, Haig and Savette who were
6 commissioned to serve as the world's literature with
7 respect to tobacco related publications and pose that --
8 Q. Did that result in a series of texts or volumes that
9 compiled the world wide research?
10 A. Yes, it did.
11 Q. And I think ultimately there were?
12 A. There were four in total; one primary and three other
13 supplementaries.
14 Q. And what was the other source of information that you
15 had in compiling kind of the overall scope of published
16 research?
17 A. From the Surgeon General's reports.
18 Q. And are those sources the basis of the chart we have
19 here?
20 A. Yes, they are for the later periods.
21 Q. What does this chart reflect concerning the scope of
22 published research?
23 A. Well, without the risk of being rude, an enormous
24 area of research and research publications.
25 Q. The numbers that appear, the first number that

3555
1 appears at the bottom, is that from this collection here?
2 A. The 6,000.
3 Q. Yes, the Larsen textbook?
4 A. Yes.
5 Q. Do you know who funded the publication of the Larsen
6 textbook?
7 A. I think the funds came from the CTR.
8 Q. The 7 thousand, 30 thousand, and 57 thousand figures,
9 where did they come from?
10 A. They came from specific Surgeon General's reports
11 where they actually identified and quantified the number of
12 papers they reviewed for the purposes of producing their
13 report.
14 Q. Beyond the Surgeon General's reports, were

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

reports
15 that came out in the United Kingdom that likewise analyzed
16 and compiled the course of research?
17 A. Yes, there was.
18 Q. What kinds of reports came out of England?
19 A. Well, of course, the Royal College of Physicians
20 reports, of which there have been numerous, at least 4 if
21 not five, to my knowledge, spanning from the 60's into the
22 80's. And then of course the independent scientific
23 committee on smoking and health, that produced many many
24 reports.
25 Q. For the record, the Larsen, Haig and Savette text

3556
1 books we referred to are GG7, the Royal College reports are
2 GK 00005, AS 1002, AIW 2179, AIW 3561.
3 Were there also INC reports, or did you mention
4 those?
5 A. Yes, I did mention those.
6 Q. What about the Surgeon General's reports in the
7 United States? Roughly how many Surgeon General reports
8 have there been?
9 A. I think in the order, certainly, in excess of 20; 20,
10 25.
11 Q. Do you have a chronology of the Surgeon General
12 reports that appears at tab 32?
13 A. Yes, I have.
14 Q. Does this reflect the basic sequence of Surgeon
15 General reports that have been issued?
16 A. It does, yes.
17 Q. And again, in terms of just the volume of research
18 that ends up being digested and analyzed by the Surgeon
19 General, can you give us a rough notion of how voluminous
20 it is?
21 A. It's just a phenomenal amount.
22 Q. If we went back to the question that led us to go
23 down this road here, could anyone control the evolution of
24 biological applied research, does this Demonstrative 7393
25 reflect the factors that you have now discussed with us?

3557
1 A. Yes, it does. And I, of course, find it

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

very hard to
believe how anyone, from my simple perspective as a
scientist, can actually level that at the industry.
Q. Do you have an opinion from the point of view of the
work that you have done as to whether anyone could really
control the evolution after applied biological research?
A. I just thing it is impossible.
Q. Let's talk about the last item that is on your list
that we began with. And I'm going back to that for a
moment. What has been learned from applied biological
research? I want to begin with what BATCo has learned from
the applied biological research that has taken place over
the years.
From your own perspective, can you tell me what
BATCo has learned from the applied biological research
that it has sponsored or conducted?
A. Excuse me a moment. Sorry.
I need to take a breath here, because it is an
easy question to pose, it's such a difficult thing to wrap
up and communicate to people.
BATCo has undertaken, as other tobacco
companies have as well, an enormous amount of research.
We have looked at many, many tests and test methodology.
We continue to review, evaluate and adopt where possible
test methodology for the purposes of understanding the



product and helping us steer product modification.
The sole reality is, which is borne out by the
science and publications and our interpretations,
basically, the only conclusion I can satisfactorily come
to is that it's really a question of dose, which is the
key issue for the consumer.
Q. Let's take a step back. In terms of the different
tests that have been used over the years?
A. Yes.
Q. Did those tests have any organization come out, any
governmental organization come out, and say, there is one

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/hyxd0001

right test?
A. Absolutely and categorically not.
Q. Has any scientific organization or association come out and said there is one right biological test?
A. Certainly not. And it flies in the face of the toxicological area of science.
Q. If we take a look at the different kinds of tests that had been used do -- the different kinds of tests that have been used give you consistent answers for all these different design parameters?
A. Sadly, absolutely not.
Q. Is there a report that was prepared in the ordinary course of business by BATCo on this very subject?
A. Yes, there was.

3559

Q. And directing your attention to tab 43, is that chart taken from the BATCo report that talks about the biological activity of smoke?
A. Yes, it does, yes.
Q. For the record, that's PX 3448, and the Demonstrative is 7399.
Could you just take a moment, Mr. Read, to explain what this chart shows about the results of the different tests that have been used?
A. Yes, of course.
Again, as you heard early today, we spoke about three primary areas of tests and tests methodology; mouse skin painting, inhalation studies, and also Ames methodology in vitro tests.
If we look very, very quickly at two of the simplest parameters that go into a cigarette, the two different types of tobaccos, burley tobacco on the top line and flue cured or bright tobacco, as they are sometimes known in the United States, you can simply look across the line. The bar chart shows the measures. If you look across the burley line you can see, under the Ames test we have normally high values. If you look at the mouse skin painting, you have relatively low values in that test and test methodology. In the case of inhalation, you have some intermediate measure.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3560

If you now look at the flue cured line --

Q. That's the next line down.

A. It is.

You see that in the case of the Ames test, we get completely the reverse set of results? We have low values in the Ames test compared to what we got with the burley tobaccos; and again, that's looking at the same tests but with two different types of tobacco, which, if and of themselves you might say they are biologically different, but if you look across the line with respect to the other tests, you can see that the flue cured tobaccos now have relatively high values in the mouse skin painting tests, and somewhat higher responses in the inhalation test compared to the burley tobaccos. So you have a mixed picture.

Q. With that backdrop, you have said what you have learned, which says, we got to look at the smoke, smoke dose?

A. Yes.

Q. When you say -- or what do you mean when you say: We have come to focus on the smoke dose? What do you mean by that?

A. I suppose I was jumping ahead in terms of my own thinking. Did we stick with this chart?

You can clearly see when you look at it in some

3561

more detail that for an array of product and product modifications, and these are some of the simplest ones that we can make, you see that we have a range of responses in the series of biological tests that are available to us to assess the product.

That leaves me as a scientist. And in my previous position with BATCo as the manager, as to how do we interpret those results, how are we suppose to administer a modification program using the best tools that we have available to us in terms of what is

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

the right
direction to take for the benefit of the consumer.
The only safe conclusion, not that I came to
independently, but regulators, the independent scientific
committee in the would, United Kingdom and others, have
said, the safest strategy is to develop products with
lower deliveries.
And the challenge is to make a lower delivery
product that the consumer finds acceptable and smokes as
a low delivery product. On that basis you still have to
bear in mind, and this is what gives me migraines, is
challenges that you do have to use a variety of design
variables to reduce the delivery of the product.
To be able to offer products with reduced
deliveries, the dilemma you are left with, I and others
have to make some judgment that that is an acceptable and

3562
satisfactory process, and that we feel comfortable in
actually designing products of that type and offering them
to the consumer, left with this back drop of an array of
tests that, I guess, give us mixed messages and mixed
information.
Q. Let me ask you, Mr. Read, in terms of the actual
products that are being sold, has this learning that is to
reduce deliveries and reduce dose, has that learning been
followed through commercially?
A. Yes, it has.
Q. In terms of the continuing research that BATCo is
performing today, what impact, if any, does this idea of
reduced dose have on continuing research today at BATCo?
A. Again, it's a complicated question to answer. If I
completely understood what you are asking me.
Let me just take a few step backs to set it in
some form of context.
I've indicated to you that we conduct these
tests, of course, in parallel with this; we

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

undertake a
lot of chemical analyses, so we try to build more knowledge and bigger data set against which to make decisions.

So when we bring about cigarette designs, what I've attempted to do in my own mind, and in our work programs, is actually build a framework of reference. I

3563

accept that differing tests give a measure of differing results, so that I look at the responses of certain cigarette designs, cigarette design variables, and the effects they have in those tests, so that I try to create for myself a backdrop of information about existing products. So I have a frame book of reference to which to make a judgment.

So then when we bring about cigarette design modifications of a substantial nature, I then look at these responses in these tests and other tests and look at the chemistries and make some judgment and, say, yes, it's still within my framework of reference.

So that gives me confidence that I think we are moving directionally in the right direction.

Now, in terms of what we are doing in terms of the future, to some extent we are constrained by available test methodology, the only true test animal species is man, yet I'm not prepared to experiment with him.

What we attempt to do is think in terms of how can we simplify the cigarette smoke itself, so rather than presenting the complex picture of smoke constituents of which there are somewhere between 67 and 10,000 compounds within that smoke aerosol, we are undertaking work that makes products simpler in terms of their chemical analysis.

3564

So, again, directionally I think we are moving in the right direction, in parallel with that. We

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

continue to look at these tests and more sophisticated tests. These are really, the in vitro test are the tip of the molecular science iceberg. We are looking at numerous other tests and test methodology to give us an insight of how chemicals and smoke actually interact with biological systems.

There is one other aspect that I felt very strongly about while I was head of the research at the BAT, and that was my concern, not only the deliveries we get on under machine smoking conditions, I'm interested to know what does the consumer get when he smokes the product?

Because if I'm offering him an array of products with reduced machine smoking deliveries, I'm expecting to give him products that deliver to him lower, total dose of the material. Because, as I said earlier, the only clear strategy I feel we can be confident about is to directionally move the smoker to products with reduced deliveries that they find satisfying and acceptable.

MR. BERNICK: Thank you, very much.

THE COURT: Cross examination.

MR. KRISTAL: Thank you your Honor.

3565

CROSS EXAMINATION

BY MR. KRISTAL:

Q. Good afternoon, Mr. Read. How are you?

A. I'm fine, thank you.

Q. My name is Jerry Kristal. We met briefly in the laboratory, did we not?

A. We did. It was a pleasant meeting.

Q. Can you think of any product that has been researched more extensively than the cigarette?

A. I can't, probably not, no.

Q. We have boxes of documents research, we have got texts, you mentioned whole host of other materials; is there any other product?

A. Not to my knowledge, no.

Q. You would agree, though, that every year hundreds of thousands of people die from cigarette smoking in this

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

country; and I don't know how many more throughout the world. Would you agree with that?

MR. BERNICK: Objection, exceeds the scope.

THE COURT: Overruled.

THE WITNESS: I don't think I said that. I think, if you like to hear my view and opinion with respect to the epidemiological studies, I would be happy to talk to those.

BY MR. KRISTAL:

3566

Q. Well, is your opinion that smoking is a significant risk factor for a number of diseases, based on the epidemiological evidence?

A. I would agree absolutely, yes.

Q. Is it not your opinion, therefore, that people are dying because of cigarette smoking?

A. As we just established, cigarette smoking -- and I agree categorically that cigarette smoking is a risk factor for a number of diseases, and most notably for lung cancer. But that's what it is, it is a risk factor.

Q. Which means, and we'll get into this in a moment with dose response, but the more you smoke the more your risk is of getting a disease?

A. I agree with you that the epidemiology is very strong and compelling. The more cigarettes you smoke the greater the risk; the longer you smoke cigarettes the greater the risk. If you sees the smoke the risk actually diminishes I agree absolutely with that.

Q. Now the lower deliveries you were talking about, the goals that lower and lower the deliveries is both tar and nicotine, correct?

A. Whether I consider tar, I consider nicotine is an integral part of the tar.

Q. You have in the past, and tell me if this is still your belief, that a cigarette is, in effect, a nicotine

3567

aerosol delivery device. Do you still agree with that?

A. I don't think I actually said that, and I don't know

http://legacy.library.ucsf.edu/tid/owp05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

3 that is actually my opinion.
4 Q. I know this happened a while ago, so this is not a
5 memory test, can you look can we have 2726, please.
6 Can you see that to your right? I know we
7 discussed our glasses earlier, you need them to see
8 distance?
9 A. No, that's the right distance for me.
10 Q. This is a BAT document from a nicotine conference in
11 South Hampton, and that's the Research Center of BAT, is it
12 not?
13 A. Yes. And I actually hosted this conference.
14 Q. We don't need to show the second page where you gave
15 some introductory remarks.
16 A. I did.
17 MR. BERNICK: Your Honor, I object. This
18 exceeds the scope, this is a conference pertaining to
19 nicotine not biological.
20 THE COURT: I think it is somewhat related, so
21 I'll overrule the objection.
22 BY MR. KRISTAL:
23 Q. If you could go to the next highlighted page.
24 This is, is it fair to say, in addition to
25 giving the introductory remarks you also gave a few

3568
1 presentations at this research conference?
2 A. I beg your pardon? I'm sorry, I was reading the
3 text.
4 Q. I'm sorry, I apologize.
5 This is the text from one of several addresses
6 that you gave at this conference, is it not?
7 A. It is, yes.
8 Q. And if you read the highlighted section, did you not,
9 at that time, say in general terms the cigarette can be
10 considered as a nicotine aerosol delivery device, which is
11 controlled by the mouth as a mechanism for determining the
12 maximum per puff delivery.
13 Did you not refer to it at that time as a
14 nicotine aerosol delivery device?
15 A. I did actually write that. You may remember I
16 actually wrote a very, very large introductory document to

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

all of the attendees in trying to set the scene to create an environment in which we could consider a whole array of theoretical possibilities at that time. And that certainly what I'm saying there is not necessary in my own words, but is that which was in the general literature, and was views, that were clearly held by others outside of the industry, people like Russell, people like Marty Jarvis, people like Stephanie, or the people that we had worked with and supported in research studies.

3569

Q. Further down on that page, the next highlight, do you recall saying at that conference, that the smoking act can be considered as a means of nicotine dosing. Do you recall saying that?
A. Well, it's part of the text. And yes, you have highlighted a part of the text.
I don't have the whole document before me, I would be happy to set it in a context if you wish me to.
Q. Well, it's part of the same page with that other quote.
A. Yes, I saw it was from the page. I haven't seen the whole page for a long time; it was '94 or '95.
Q. '84?
A. '84, '85, quite a long time ago.
Q. Did you not review this last night?
A. Certainly not, no.
Q. You would agree that more than 95 percent of nicotine is absorbed in the respiratory system, correct?
A. Yes, I would agree with that.
Q. Do you know what Y one tobacco is?
A. Yes, I know what Y-1 tobacco is.
MR. BERNICK: Objection, this whole thing really exceeds the scope.
THE COURT: Where are you going with it?
MR. KRISTAL: I'm going to the use of Y-1

3570

tobacco commercially by Brown & Williamson in their cigarettes with respect to whether those things were tested in the types of tests that Mr. Read was

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

talking
about.
MR. BERNICK: I would like to make a motion at
the side bar.
THE COURT: Would you come forward for a
second.
(The following discussion was conducted at the
side bar between court and counsel, out of the hearing of
the jurors, as follows:)
MR. KRISTAL: The Y-1 tobacco was genetically
engineered high nicotine tobacco. And I want to ask,
before they put it on the market whether they ever
conducted any of these applied research testing. It was
specifically grown in Brazil, imported into the country
legally. And used commercially by B and W.
MR. BERNICK: This is completely outside the
scope. He testified to biological testing. What they are
now trying to do is introduce a particular line of tobacco
that was developed by Brown & Williamson in the United
States for purposes of showing that Brown & Williamson
manipulated nicotine levels. It is completely outside the
scope of his testimony.
If they wanted to ask Dr. Dixon yesterday, they

3571
could have. He was here to talk about nicotine. This is
a biological research guy, and to argue with him about
what Brown & Williamson actually did, he does not know the
details.
THE COURT: You can ask him if you lay the
foundation, but stay away from any kind of question or
comment about whether something was legal or illegal.
MR. BERNICK: One other point. It was only
used commercially as a blending agent beginning in 1994,
which has no relationship whatsoever to any of the
products.
THE COURT: I understood you were going to

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

stick to the issue that they did testing.
MR. KRISTAL: I want to ask him what it is and the exact kind of testimony.
THE COURT: You can raise an objection at the time.
BY MR. KRISTAL:
Q. Mr. Read, are you aware of Y-1 tobacco? What that is?
A. I am familiar with Y-1 tobacco, yes.
Q. And am I correct that Y-1 tobacco was a genetically engineered tobacco to specifically have a high nicotine content?
A. Not specifically, no. In fact, from the UK

3572

terminology, it's not a genetically modified product. It is a product of cellular fusion.
And again, it was not developed for high nicotine content using genetic modifications with genetic fusion. It came out of the USDA reading program that had arose from an MRRC requirement that developed a product that had a relatively low nicotine relative to tar in conjunction with the acceptance, gaining acceptance of low delivery products that occurred in the states in the 80's and in the UK in the 80's and through to the 90's.
Q. And the Y-1 tobacco was grown in Brazil, imported into the U.S., and used by Brown & Williamson commercially in some of their tobacco products, correct?
MR. BERNICK: Objection. Lack of foundation and scope.
THE COURT: You have lay some foundation that he has.
BY MR. KRISTAL:
Q. Are you aware that Brown & Williamson commercially used Y-1 tobacco in their products?
A. I'm aware that Brown & Williamson actually developed, or worked with DNAP for the purpose of producing some agronomic properties for the purpose of growing the Y-1 tobaccos. I'm not aware where they actually grew it. I think some of it was grown in the U.S.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

3573

Q. Were you aware, wherever it was grown, that it was used commercially by Brown & Williamson?
A. I am. Let me give you a complete and full answer.
THE COURT: Do you know one way or the other?
THE WITNESS: I'm aware that certain Y-1 tobaccos were used as part of clearing inventory were included in some commercial products for the purposes of clearing in vitro, not for purposes of changing the tar and nicotine ratios.
Q. So it was used commercially by Brown & Williamson?
A. For the purposes for which I just outlined, yes. To the best of my knowledge.
Q. And before the Y-1 tobacco was used commercially by Brown & Williamson in their cigarettes, were any of the tests that you mentioned, either skin painting tests, inhalation tests or Ames test, or any of the other tests that you mentioned, used to test the Y-1 tobacco product?
A. It wasn't. And comes at no surprise to me, because any other tobacco cultivar that is developed under the USDA programs aren't put through any similar tests either.
Q. The dose response relationship that you talked about, with respect to cigarette smoking, the dose response relationship is what is called linear, is it not, or nearly linear?
A. I'm sorry, you mean in epidemiological terms, or do

3574

you mean in toxicological terms.
Q. Both?
A. Toxicological test systems?
Q. Yes.
A. In a toxicological test system, part of the system validation is to actually establish a dose response curve. That's absolutely correct, yes.
Q. And that curve is linear, is it not?
A. Well, it can be curve linear, but it is, there is a relationship, yes.

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

Q. And the same holds true for the epidemiology, the study of humans. The dose response relationship is a linear curve. Do you follow what I'm saying?
A. I think I understand where you are going.
Q. Let me just ask it this way and try.
The more you increase, for example, the dose, you get the same proportional increase in risk of disease. So as you go up, in other words, you go up twice in dose, you go up twice in its linear curve. So if you drew a graph it would be almost like a 45 degree angle, would it not?
A. I'm not an epidemiologist, but I think your calculation is wrong. I think it is log linear, which is not the same as being linear. And I think you apply something that is not strictly correct. But as I said, I'm



not an expert in that field.
Q. Now, you testified earlier, I think, that you were not prepared to engage in experiments with humans in terms of testing dose response, something to that effects?
A. I said something along the lines that I'm not prepared to experiment with humans with respect to radically modified products without at least testing them and having comfort that I'm happy with the test results prior to presenting them to the consumers, yes.
Q. Do you know a scientist at BATCo named Wilkes?
A. E. B. Wilkes. Ted Wilkes.
Q. And Ted Wilkes worked in that inhalation toxicology tests at BATCo in the mid-70's?
A. That isn't strictly correct. Wilkes was a statistician that lent some analysis or analytical support to the data. And, from the Janus series of studies, which is the mouse painting not the inhalation studies, to the best of my knowledge.
Q. If we could bring up Exhibit 1344, please. If could you zoom in on the title.
This is about two years before you arrived at BATCo?
A. Two years before, yes.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

24 Q. And this is a conference on inhalation toxicology,
25 and that was some of the tests that you were talking about?

3576
1 A. That's correct, yes.
2 Q. And the Group Research and Development Center,
3 that is the group that you worked in?
4 A. Yes. That's the South Hampton center, yes.
5 Q. The document is discussing dose symmetry, controlling
6 the doses for the inhalation experiments that were being
7 considered.
8 Do you recall that? Have you read this
9 document before?
10 A. Well, I don't recall the detail of the document, it
11 was written in '74, I haven't had a recourse to refresh my
12 memory on it, but I know the subject. If you would like to
13 bring me to any particular points I would be happy to talk
14 to them.
15 Q. Would you accept my representation this document is
16 discussing how to go about setting up the dose requirements
17 for this inhalation test? It was a conference along those
18 lines?
19 A. By all means, yes.
20 Q. Could we go to the highlighted page? Could you bring
21 up the paragraphs there. And this is what Mr. Wilkes said
22 in this memo. The tobacco industry has become involved in
23 the investigation of the biological consequences of
24 smoking, as a result of the outcome of a large dose
25 response experiment.

3577
1 In this experiment no dose symmetry was used,
2 there was no control over the frequency of smoking or the
3 concentration of smoke used, and there was an attempt at
4 random distribution of the test animals to the various
5 levels of exposure, and yet a clear dose response
6 relationship emerges -- I'm referring of course to the
7 epidemiological study of the smoking habit in man.
8 Generally speaking, the only measure

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

of dose is
the number of cigarettes sold to smokers. Little information is available about the frequency of smoking, the frequency of puffing, puff parameters, puff lengths, et cetera. At first the dose response relationship seemed tenuous and was occasionally challenged; but now, after many and various epidemiological studies, few people doubt the existence of a dose response relationship in man.

Was that your understanding of the epidemiological evidence from many studies as early as 1974?

A. Well, as I said in testimony here earlier, I absolutely concurred with the epidemiological evidence, I indicated my position with respect to risk in terms of dose, time of exposure, and cessation of smoking.

To all intents and purposes, of course, between 1976 and now there have been many, many more epidemiological studies which have continued to actually

3578

underpin and underscore that particular finding.

Even at the time I joined the company in '76 it was my understanding that there was a risk associated with cigarette smoke. I was employed, and I chose to work for the company and help use my knowledge to develop tests and test systems to be able to quantify that risk, albeit in animal systems so that we have a basis for making product modifications that would have meaning and value for the consumer, so I have no issue with you.

Q. So all of this research establishes the dose response, and your job was to try to modify the product in some way, take something out, put something in, lower something, raise something. And then test it with the various test systems that you were using to see what the results would be, correct?

A. You really have to look at two levels here. We spoke earlier about fundamental research, and of course our knowledge continues to unfold with respect to disease

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

processes and mechanisms. And knowledge about the product radically improved over the period from the early 50's to today. And yes, we were looking to understand how smoke and smoke constituents acted in biological systems so we could make meaningful modifications to the product.

And I have no issue with the epidemiological evidence in the way and the position that I have stated

3579

it.

Q. And would you agree, after the number of decades you have been doing this kind of testing, there still has not been developed a safer cigarette?

A. I think I indicated by my own testimony, I don't believe that we have an array of tests that allow me to say categorically, I have reduced the risk of this product for use by this consumer. I categorically agree with that. And I indicated to you on the back of that, after many, many years of research and activity, regulators.

The Independent Scientific Committee and other eminent bodies in the U.S, have come to the same conclusion that the logical approach to the future, the safe approach to the future is to try and reduce the total delivery of the smoke to the consumer by a new cigarette design. And that is exactly what we have done over many years.

Q. And you know from reading one of the documents, the Canadian expert committee document, that Dr. Hoffman attended?

A. Yes.

Q. And Dr. Benowitz and Dr. Townsend, that in fact the lung cancer risk, despite all these modifications, has not gone down.

Is that what you gleaned from that Canadian

3580

expert report, particularly Dr. Hoffman's explanation?

MR. BERNICK: Again, I think this

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

exceeds the
scope of the direct examination.
THE COURT: Sustained.
BY MR. KRISTAL:
Q. Is it correct that BATCo never did any in-house mouse
skin painting tests?
A. I think it is a question of -- define in-house? Did
we actually do it within the confines of our walls our
building? No, we didn't. But we specifically funded those
14 studies at an eminent research center, and that is the
National Institute.
Q. In Frankfurt?
A. Yes, correct.
Q. But in terms of BAT scientists conducting research,
that was not done?
A. Again, at the time the studies were actually
instigated in the late '60 -- '66, '67, BAT, to the best of
my knowledge, did not have the specific knowledge and
expertise to conduct on and for their own behalf, they
sought the views and opinions of experts to do that for
them.
Q. Has BAT ever done in-house mouse skin painting; ever?
A. It hasn't conducted in-house mouse skin painting
tests within its own facilities. It has done it on

3581
inhalation studies.
Q. Brown & Williamson has never conducted either
in-house or mouse skin painting or in-house inhalation
studies; there has been no biological research studies done
in the U.S. at Brown & Williamson?
A. Not in their facility but it, through outside
funding, it has conducted studies, yes.
Q. Through outside funding?
A. Providing the funding for the expertise of those who
conducted the studies, yes.
Q. You mentioned briefly the Harrogate studies, the
Harrogate Lab that was doing mouse skin painting studies
for the TRC, the Tobacco Research Council, in the
mid-1960's?
A. That's correct, yes.
Q. And that was an --
A. I'm sorry. To be accurate, from 1962 onward

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

through
18 the mid-60's.
19 Q. You know, do you not, that at around 1965,
Harrogate
20 was getting ready to publish the results of the
mouse skin
21 painting tests that had been funded by the tobacco
22 industry.
23 Do you know that?
24 A. Well, throughout its history it in all of
it's
25 reports published all of its findings, and it may
well have

3582
1 been shaping up to publish a particular study, I
think I
2 have in mind the study that you are going to refer
to, yes.
3 Q. Did you ever read any drafts of any studies
that came
4 out of the Harrogate Labs in the mid-1960's? Have
you ever
5 seen any drafts of studies?
6 A. I've never see any drafts of any studies
coming out
7 of the Harrogate Labs. I've seen final reports
and the
8 annual reports that the TRC published and were
made
9 available to the public.
10 Q. Would it be fair in stating then that you
cannot
11 tell us what input the lawyers had in slanting the
reports
12 during their draft stage?
13 MR. BERNICK: Objection. Assumes
facts not in
14 evidence.
15 THE COURT: Do you have any
information on
16 that?
17 THE WITNESS: I have a view.
18 THE COURT: Not so much a view, do you
have
19 information one way or the other?
20 THE WITNESS: I am not aware of
whatever that
21 was the case, I've never seen any documents to
that
22 effect. I've never seen any evidence of that in
any
23 reports that have been issued from the TRC.
24 MR. KRISTAL: Could you bring up
Exhibit 479,
25 please.

3583
1 Q. On the left, Exhibit 479 is an August 19th,
1985 memo
2 from J.W.R. to Mr. Yaman, and this was produced
from Brown
3 & Williamson's files.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

4 The first sentence, let me just read it to put
5 it in context?
6 MR. BERNICK: Excuse me, your Honor. For the
7 record, we have objection on the grounds of privilege, and
8 your Honor has already ruled on that.
9 THE COURT: Overruled.
10 BY MR. KRISTAL:
11 Q. Ed Jacoby phoned. Assuming you were still on
12 vacation, he was concerned about the Harrogate matters.
13 Do you know that Ed Jacoby was the attorney for
14 the Council for the Tobacco Research, the industry funded
15 group in the United States? Were you aware of that?
16 A. I am generally aware of that, but I don't know the
17 details.
18 MR. BERNICK: Your Honor, I think there is a
19 mistake on timing with regard to that question.
20 BY MR. KRISTAL:
21 Q. Mr. Jacoby was an attorney?
22 A. I couldn't confirm that one way or the other.
23 Q. In the paragraph that's blown up on the side here, it
24 reads: In talking with Tony McCormick -- Tony McCormick
25 was the head of BAT?

3584
1 A. I'm not sure that he was, but.
2 Q. He was an executive at BAT?
3 A. I believe he was an executive. He may have
4 subsequently become the head of BAT, but it was prior to my
5 joining the company.
6 Q. In talking with Tony McCormick it was agreed he, that
7 the U.S. side, would be given an opportunity to preview
8 these Harrogate statements in draft. I understand they are
9 to be prepared by Jeff Todd.
10 Now, do you know that Jeff Todd was the head of
11 the TRC in Europe at the time, the group that sponsored
12 the Harrogate research?
13 A. Yes, I was generally aware of that, yes.
14 Q. He had suggested to Tony that it might be useful for
15 the U.S. side to discuss the proposed contents of the
16 statements, both at the same time or in succession with
17 Todd, before they get in to draft, on the basis

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

that it is
considerably easier to be of persuasive influence before
such a report is crystallized in draft form.
Do you see that?
A. Yes, I see that.
Q. Do you have any knowledge of this suggestion by the
attorney for Brown & Williamson that there should be some
review of the Harrogate reports in draft form prior to
their being issued?

3585
A. No, I wasn't aware of that.
Q. Would you bring up the next document please, 485.
If you can zoom in to the first paragraph.
This is dated October 8th, 1965. This is a few
months after the last document. Just to try to give you a
chronology here, and this is.
MR. BERNICK: I'm sorry. Same objection, your
Honor.
THE COURT: Overruled.
BY MR. KRISTAL:
Q. The last page, I know you can't see it, has the
initials A.Y, Addison Yaman, and it's to Mr. Finch. Were
you aware Mr. Finch, at that time, was an executive at
Brown & Williamson?
A. I wasn't, but I can accept that.
Q. Last Friday, October 1st, I had dinner in Washington
with David Hardy, the Kansas City trial lawyer who has done
such splendid work for Philip Morris in their lawsuits and
for all of us in preparing the medical testimony for the
Senate and House hearings on the cigarette warning bills.
Most of my conversations with Dave centered
around the work that Harrogate, and in particular, dealt
with the problem of publication by Harrogate expected some
time next spring concerning their work.
So that's the context of this memo. Can we go

3586
to the next highlight?
Without reading every word in that larger
paragraph, there were some concerns about the

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Harrogate
work in terms of it being interpreted as an acceptance of
causation. Do you see that as a general summary?
A. This says the existing epidemiological evidence is
the basis for that, yes.
Q. And then it says, the new paragraph, the American
industry is deeply concerned with the matter of Harrogate's
approach and it's research programs and, more importantly,
troubled by it is prospects of publication of Harrogate
results.
Would you turn to the next page. Last
paragraph begins with, mentioning what had happened after
a conversation, and then a phone conversation with
Mr. Jacoby.
Now, speaking about Mr. Jacoby, in the middle
of the paragraph, he feels very strongly, as I did, that
it is highly desirable that there be a full exchange
between TRC in the person of Todd and Day.
And you know Day was the scientist at Harrogate
in charge of the research?
A. He wasn't in charge of all of the research, a
particular aspect of research at Harrogate.
Q. So there was going to be a full exchange between TRC

3587

in the person of Todd and Day, and a very small group from
our side prior to the commencement of preparation in the
Harrogate report. This on the proposition it would be far
easier to influence the tone, and even the context of the
report, if a report must be published before it was
written, than it would be to rewrite a completed report.
Do you see that?
A. Yes, I do see that.
Q. One other document on this Harrogate matter?
A. May I offer some views or not?
Q. Excuse me?
A. Would you like me to offer some views on what you
have been saying to me?
Q. Well, does it appear to you, from what you have seen
in the two documents that the attorneys in the U.S.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

concerned with litigation were suggesting that they look at, the drafts of the Harrogate work, if it had to come out at all before it was written, so they could try to influence the tone or context of the report.

Do you glean that from the last two documents?

A. Obviously, from those documents, that is an interpretation, and that is a conclusion that you might legitimately call.

Did it happen? Did they influence Day? Have you seen the Day publication? Have you seen the caliber

3588

of the summons, the content of that report? The leading edge research that went into Peer Review Journal? The most preeminent journal in the UK at the time.

Q. You told us before you didn't see the drafts, so you are not telling this jury that what is being proposed here happened or didn't happen, correct? There is no way for us to know that at this point.

MR. BERNICK: I object to the form of questions.

THE COURT: Overruled.

THE WITNESS: Whenever I read a scientific journal I never see the drafts of the documents that went into them. I never see them unless I'm the author of them, of course. So why would I be surprised in not seeing any draft from Harrogate.

Q. I'm not asking you if you were surprised.

Are you telling this jury this attempt to influence the tone and context of the report happened or didn't happen, or you just don't know if it happened?

MR. BERNICK: I objection to the tone of the question. There is no evidence that attempt took place.

THE COURT: There is no evidence in these documents that there was a discussion about that.

MR. BERNICK: He said an attempt, that's why I objected to the form of the question.

3589

THE COURT: Overruled.

BY MR. KRISTAL:

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

Q. The question is whether you can say, or anyone can say here that it did, didn't happen, or we just don't know?
A. All I can do is talk as a scientist.
THE COURT: Let's lay a foundation. Do you know one way or the other?
THE WITNESS: I'm sorry, your Honor.
THE COURT: Do you know one way or the other whether there was contact with Harrogate to review drafts or to review research before they were put in draft form?
THE WITNESS: I don't know whether there was contact or wasn't contact.
THE COURT: Let's go on to something as to which he may have personal knowledge.
MR. KRISTAL: I think, your Honor --
THE COURT: He says he doesn't know.
BY MR. KRISTAL:
Q. Did you consider these documents in giving an opinion that there was no control over the research that was published. Did you even consider these documents knowledge?
A. All I can say to you, is all I can do as a scientist, evaluate the science and the data, and that I have done. I have seen the caliber of Day's work. It was of

3590

international standing, published in the International Journal of the highest repute. And I do not believe in the 60s, 70s, 80s or 90s, scientists from organizations with this sort of pedigree, actually manipulate and change data. I have not seen evidence of it. It is not in the interest of any academic to do that.
Q. Did you offer an opinion on direct examination regarding influence or not of the attorneys in the evolution of the science?
A. I said that I had no evidence that they had interfered with science. They have certainly not interfered with any of the data or the results or the recording of those results, or the interpretation of those results. I have never seen any evidence of that from my firsthand experience in 23 years in the company.
Q. Without seeing the Harrogate draft and comparing that

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

to the final publications, can you tell this jury that there was no change influenced by the attorneys?
A. You are asking me to say that I am calling into question the integrity of Dr. Day as to whether he would change his data. I say to you, my experience of UK scientists from that organization, and academia in general, I am not aware that scientist actually change or manipulate their data. And I do not believe that Day did either.
Q. Are you aware that there was concern by the United

3591

States attorneys involved in tobacco litigation regarding research and public positions taken by members of the industry in the United Kingdom, and how that would affect the litigation in the United States?
A. Well, again, you will have to accept I'm a simple minded scientist, I'm not quite sure what the implication of what your question is. But am I surprised that there are lawyers in our industry and in my company that consider internal work public relations issues, the litigation at large; of course I'm not surprised.
Q. Have you seen documents relating to discussions between the United States attorneys and the scientists in the United States, in the United Kingdom regarding positions that should be taken in the United Kingdom regarding the science?
A. My strict answer to that is no, I'm not aware.
Q. Could you bring up Exhibit 574, please.
This is a meeting -- this is a memo prepared by members of the TRC from the United Kingdom regarding a meeting at the CTR in New York that took place in March of 1967. And this lists the people who were present at that meeting, the initials are the initials of the TRC members who came over from the United Kingdom.
MR. BERNICK: Your Honor, this is a privileged document.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3592

THE COURT: Overruled.
BY MR. KRISTAL:
Q. Mr. Ram, who we saw up above, was the counsel for R.J. Reynolds?
MR. BERNICK: I apologize, your Honor. I also believe this is a TRC document that it is hearsay as well.
THE COURT: Well, is it being offered for the truth of the assertion?
MR. BERNICK: I'm assuming by the fact he's now reading it and showing it to the jury, asking about the content, that's exactly why it is being introduced, there is no predicate for it being introduce for purpose of notice.
THE COURT: It is not hearsay. Hearsay is offered for the truth of assertion. Here the assertion would be it was unwise to carry out biological research. It has relevance. Whether this is a true statement or false statement, it has relevance that this statement was made.
So under 801 it is not hearsay, it is not offered to prove the assertion in the statement, so it is not hearsay.
MR. BERNICK: I thought it was offered for the truth. That's why I objection.
BY MR. COUGHLIN:

3593

Q. Mr. Ram, supported by Mr. Smith, immediately stated in the strongest possible terms that the TRC had been unwise to carry out any biological research at all; that we were being very foolish in reporting it; and that, although scientifically we had discovered nothing new, we were like there to embarrass the United States industry severely by the course which we were following.
And under the American position is as follows, the Number 1 reads: The causation theory remains an unproved hypothesis, and there is no further scientific

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

data to confirm it.
And if you, just another zoom in, this is now
the position, representatives from the United Kingdom made
the following points.
The medical profession in the United Kingdom is
unanimously convinced that the causative hypothesis is
valid, and this is taken for granted in regard to their
attitude toward smoking experts whom we have consulted.
All felt that although the direct relevance of the mouse
skin painting work was open to question on a balance of
probabilities, it was likely to be helpful from a point of
view of human health, to reduce the tar delivery from
cigarettes. That's exactly what you have been saying,
correct?
A. Yes. And in 1964 I thought the Surgeon General came

3594

to the same conclusion. We are talking 1967 here, did you
say?
Q. Yes. And this is the UK position being postulated by
the TRC?
A. Which is exactly the same as the U.S. position.
Q. If you could bring up the summary here.
Summary. The lawyers of the American tobacco
industry, would prefer that we in the UK did nothing to
inform the public of any modifications to cigarettes, that
we should actively deny the causation hypothesis, and that
by taking any other course of action we were merely giving
support to the enemies of the industry in the United
States.
Were you aware that the United Kingdom
scientists were being asked by the American lawyers not to
act, not to take any other position other than denying the
causation hypothesis?
A. As I read that statement, it says they would prefer.
I think the facts speak for themselves.
The Harrogate research continued, it was
published, BATCo continued its own research, it

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

was
published, it worked closely with both government,
government departments, and the independent scientific
committee in sharing any and all of its information in
this field of research, of activity.

3595
Q. Let's turn to the subject that you testified to about
regarding distribution of battery search reports throughout
the world, okay?
A. Yes.
Q. Did you have direct responsibility -- I think you
said you did -- at some point in time for that happening?
A. Yes, as head of research, and any report emanating
out of South Hampton was managerially under my control.
Q. From what period of time did that occur?
A. Well, I was nominal head of research from 1991
through to about 1998; and of course I worked in the R and
D Center from '76 through to '85.
Q. Is it fair to say that battery search was distributed
to research center research departments of other companies
in the BAT family, including Brown & Williamson?
A. That is correct.
Q. Did you ever track what happened to the research once
it reached Brown & Williamson?
A. You mean the research documents?
Q. Yes, sir.
A. Let me lay out what happens. In South Hampton you
have a very fine library, which I'm extremely proud, we
have a very fine record of all of our research findings and
reports. We have and have had for many, many years, very
competent staff working in our information sciences

3596
department, and they keep very true and accurate records of
every report that has been written. They index it, they
file it, and they are responsible for directing those
documents to the people identified on the direction lists.
That aspect I was responsible for during the

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

period from '91 through to '98. And I can say categorically that is what happened to the documents at that time.

However, we do have a complete set of records right from when the center opened in about '56, '57, and we have a documented history of all of our reports and their distributions from that time. So to that end I'm knowledgeable of what was prepared and to who and to where it was sent.

Very recently I'm aware of an audit that was conducted at Brown & Williamson by one of my peered scientist trying to tract that record over that extent of time period to identify, indeed, whether they had received those documents and whether or not their records aligned with ours.

And, as I said to you, there was something like between two and three thousand reports over a nearly 45 year history that were distributed out of South Hampton.

And when I saw the data from for Brown & Williamson, they account for in excess of 95 percent of the documents that

3597

were sent from South Hampton, were still in their records and still within their facility. Which I think is quite a testament to any document storage system, department, or library system.

Q. When did this audit take place?

A. I think it was a couple years ago.

Q. So as of a couple years ago when the audit took place, you are saying the audit showed the documents were where they were supposed to be, correct?

A. Indeed.

Q. Would you bring up 2002, please.

And this is a memo from J. Kendrick Wells to Ernest Peppels, and it's dated June 15, 1979. This is while you were at BATCo, correct?

A. That's correct.

Q. And the first sentence, the highlight there?

A. I'm sorry, I was at South Hampton with BATCo, but at

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

South Hampton.
Q. And this reference, South Hampton, the distribution?
A. Yes.
Q. Did you see this last night when we sent it over?
A. I don't recall reading it.
Q. A lot of documents?
A. And it all came over very late, and I was tired so I didn't read much at all.

3598

Q. First sentence reads, I talked with Dr. Esterly, you know.
Gill Esterly was a researcher at Brown & Williamson?
A. Yes, I knew Gill.
Q. Was he head of R and D at that time?
A. To my knowledge, he was never head of R and D. He was a senior scientist at Brown & Williamson organization.
Q. I talked with Dr. Esterly about the present circulation of the South Hampton material.
That's the material we are talking about?
A. Yes.
Q. Three copies of each written report go -- sent -- gone to B and W; two go to Dr. Sanford, and one goes to Dr. Hughes.
Dr. Sanford, at that time what position did he hold at Brown & Williamson?
A. I think he was the head of R and D with other responsibilities, but I think he had one of his -- R and D as one of his functional responsibilities.
Q. And Dr. Hughes is I.W. Hughes?
A. Yes. I think he was CEO at the time.
Q. This mentions who copies of the research material being sent out from your facility were being distributed to in Brown & Williamson, is that right?

3599

A. That's correct.
Q. Would you bring up the next highlight.
I have not come up with any improvements over the proposed method of handling this incoming material, in addition to the handling procedures you outlined. The material should come to you under a policy statement between you and South Hampton, which describes

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

the purpose of developing the documents for B and W and sending them to you as use for defense of potential litigation.

Now, is it fair to say that the South Hampton research in 1979 was not being conducted in reality for defense of potential litigation, was it?

A. Certainly the work I was conducting had -- it was for research purposes, each building, for the purposes of product and product modification.

Q. Do you know of any materials at South Hampton in the Research Department at any time that you were there that were being developed for potential litigation, defense of potential litigation?

A. Certainly not.

Q. It is possible that a system can be devised which would exempt the engineering reports, because it might be difficult to maintain a privilege for recovering certain reports under the potential litigation theory. Continued law department control is essential for the best argument

3600

for privilege.

Were research documents from South Hampton, during the time that you were there, meant for the law department in facilities world wide or meant for the research departments world wide?

A. This seems to be an area of specialization, and I'm certainly not a lawyer and I have no idea of what the ramifications of Kendrick's words are here in talking to Bob Sanford or Wally Hughes. All I can say, we prepared the research report, the research scientists to the absolute best of my knowledge, whatever the route might have been, these documents finished up in the hands of the B and W scientists.

Q. Do you know whether or not, for example, the procedure that was adopted here or proposed here to send the documents first through the law department, can you say

http://legacy.library.ucsf.edu/tid/ovw05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

one way or the other whether that happened?
MR. BERNICK: Object to the form of the question. Adopted or proposed? It has to be one or the other.
THE COURT: Overruled.
THE WITNESS: I'm sorry, would you mind asking the question again, please.
Q. I'm just asking you, as you sit here today, can you tell us, can you tell this jury whether the procedure

3601

that is being talked about here was or was not ever adopted?
A. I can say categorically I have not the first idea, other than knowing the scientist. I've worked with them for many, many years, I am aware of the fact they all received the documents at Brown & Williamson and they had the opportunity as scientist to see them, to review them, and indeed used to come over annually to our center at South Hampton and review our research programs.
Q. Can you bring up Exhibit 2823, please, this is six years later. I'm sorry let me go back to let's go to the next document 2823.
This is a letter from R. J. Prichard on British American Tobacco Company stationary. Who was Mr. Prichard in 1985 at BAT?
A. I think at that time he had many positions. I think Ray Prichard, who was certainly a member of the BATCo board. I think he was leaf director for a period. He had other functions and responsibilities which may have included R and D. I think he was deputy chairman for a period of time as well.
Q. Now, this letter is to M. J. Hardwick in South Hampton, and GR&DC is the Group Research and Development?
A. That's correct.
Q. That's the group you work in?

3602

A. That was the name of the South Hampton facility, at

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

that time.
Q. Were you working under Mr. Hardwick at this time?
A. Yes. I just left the South Hampton physician in April of 1985, and that's January 10th.
Q. Dear Mike, would you please arrange for all reports and materials for world wide distribution emanating from GR&DC to be sent to Robert L. Maddox, Jr., Wyant, Terrents and Combs, 28th Floor, Citizens Plaza, Louisville, Kentucky, USA.
This firm shouldn't be listed as a distributee in these documents, nor should B and W.
Q. Is it fair to say this does not comport to your understanding of what happened to the research documents at South Hampton?
A. No, that's not my take on what I read there to. That reads like a post box, that's where I was sending the records. I indicated to you that the scientist received them. I have firsthand knowledge of the facts they received them.
Q. Are you saying you were aware in 1985 that South Hampton research reports from GR&DC were first sent to an attorney, and B and W shouldn't be listed as a distributee. Are you saying you were aware of that at that time?
A. Excuse me, just let me reread.

3603

Q. Yes. Would you like the whole document? May I, your Honor?
A. I think I can read it from here.
Q. All right.
A. I think it says the firm should not be listed as a distributee. You said Brown & Williamson shouldn't be listed.
Q. It says this firm, I assume that means BATCo or the law firm, either way, this firm should not be listed as a distributee in the documents, nor should B and W. Doesn't it say that?
A. Yes, it does say that. And we have a document, the record of course of who we did distributes them to, and

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

there is no evidence that I have seen, whatever, in our library and in our systems that indicates that individual members of Brown & Williamson weren't nominated on the distribution list.

Q. Could you go to 2824, please?

This is dated January 17th, a week after the last memo. And this is a file note from J. K. Wells, who we saw earlier was and attorney for Brown & Williamson, and the subject is document retention.

Who's Earl Kohnhorst at that time at B and W?

A. You are talking 1985?

Q. Yes, sir?

3604

A. I think Earl was in charge of research, development and engineers.

Q. I gave Earl copies of papers which contained, variously, document numbers and titles, and document numbers and abstracts.

I explained I had marked certain of the document references with an X. The X designated documents which I suggested were deadwood in the behavior and biological studies area. I said that the B series, or Janus series, studies should be considered as dead wood.

Now the Janus series studies were the ones you had mentioned earlier, correct? That were done by Batelle laboratories in Frankfort for the mouse skin painting tests?

A. That's correct, yes.

Q. If you look at the next page.

I suggested that Earl have the documents indicated on my list pulled, put into boxes, and stored in the large basement storage area. I said that we would consider shipping the documents to BAT when we had completely segregated them.

I suggested that Earl tell his people this was part of an effort to remove dead wood from the files, and he nor anyone else in the department should make any

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

notes, memos or lists.

3605

Are you aware of any materials that were stored in boxes being sent to BAT through their attorneys, through the attorneys from Brown & Williamson at that time?

A. Well, all I can talk about is what I know, and I can state categorically no such boxes ever came back to South Hampton.

Q. 2870, please.

Now, this is an April of 1985 Brown & Williamson memo from Mr. Kohnhorst to Mr. Gill Esterly, who we mentioned, with a copy to Lance Reynolds.

Do you know Lance Reynolds?

A. Yes, I do.

Q. He was also in Research and Development at that time?

A. Yes.

Q. This references the subject is report distribution.

Could you bring that up, that paragraph.

This now says, the procedure for receiving external reports from the research center has been changed.

Were you aware of a change, at that point, in terms of the procedures that Brown & Williamson had regarding the receipt of external reports?

A. I think what he must be talking about is their receipt of the document, there was no change at our end.

3606

Q. I understand that. What I'm asking you, were you aware of any change in Philip Morris's end regarding their receipt of reports sent by your group in South Hampton?

A. Not specifically, not at that time.

Q. In the future, two copies of each report will come directly to me. One copy will be forwarded directly to you for your prompt review. You should pay particular attention to any sensitive issues and, in those cases where you have concern, you should review with Mr. Kendrick Wells prior to submission to the library system.

Is there any reason you can think of why Mr.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Kendrick Wells, the attorney for Brown & Williamson, would need to review sensitive reports coming out of South Hampton before they got to the Research and Development library at Brown & Williamson?

A. All I can say, is we are talking about 1985. I am not familiar with the legal position within the US. It is a very litigious arena, as I understand it. I don't know what the legal issues were pertaining at that time, and Kendrick Wells is a legal officer of the company and maybe he had good reason. He should at least be aware of what was put in the library or made available to Brown & Williamson.

But, as you can see, it was being passed to members of the R and D department, senior members of that,

3607

they were charged to specifically read them and take a take, from a technical and scientific point of view.

Q. Last memo on this subject, 3357. This is 1989, November.

This is now from J. K. Wells, the 3rd. That's Kendrick Wells?

A. That's right.

Q. To Ray Prichard, correct?

A. Who's now the CEO of Brown & Williamson.

Q. So the gentleman who we saw earlier in 1985 who wrote the letter saying send the materials to the lawyers in Kentucky, then came overseas and became the head of Brown & Williamson?

A. That's correct.

Q. Okay. And this is what Mr. Wells wrote to Mr. Prichard.

Pursuant to our conversation, this memorandum presents a synopsis of arguments that it is crucial to avoid the production of scientific lists and documents at this time, even if production were to occur in the indefinite future.

One, the documents will be difficult for the witness to explain.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Plaintiffs can argue certain statements in the documents demonstrate the scientists of the company

3608

accepted causation and addiction.
Were you aware that there was any attempt at Brown & Williamson to hide documents in the law department that came out of the Research Department in England.
MR. BERNICK: I'm sorry, I forgot to interpose for the record an objection to the document itself that is being offered.
THE COURT: Overruled.
THE WITNESS: And again, I'm not trying to delay you. Would you mind just briefly restating your question.
Q. Yes. I am asking you if you were aware of an attempt by Brown & Williamson to take documents from the Research and Development unit in South Hampton and hide them in the law department so that they would not be produced in litigation because the documents would be difficult to explain?
A. Well, again, I don't have your legal mind, but the way that I read these documents was that a law department, being external/internal would act as the funnel through which documents flowed, and seem to give -- I don't understand all these legal terms -- some degree of legal privilege.
I think that interpretation says that they weren't passed on for scientific use. As I keep saying to

3609

you, I'm aware of the fact that the documents were passed to the scientists. The scientists were aware of the science at South Hampton, they did come at least annually, not twice, annually, and reviewed our programs. They were co-sponsors of our programs and interested in what we were doing, and actually gave us advice on what they

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

thought we
ought to do.
Q. Point number 2 there, the witness probably will be unprepared to explain the documents adequately to preserve credibility for the management's statements on smoking and health.
Were you aware that there was a concern in the United States that the research coming from England would be, if disclosed would be difficult to preserve the credibility of the US management's statements on smoking and health?
A. I think you have a number of things mixed up here. Again, I can only read this as a scientist, not as a lawyer.
And it seems to me, what was being said here is that Brown & Williamson didn't have the technical staff with the capability, perhaps, of understanding or explaining what was in the documents.
That expertise, they were paying for that expertise and for that work to be conducted at South

3610

Hampton, and it seems that they are asking if I gave you this particular document and you read it, then you may be expected to give an expose on what it was, what it meant, and where it fit in the great scheme of things. I think it is a suggestion that their scientists in that particular field might not have the expertise to do that;
South Hampton did.
Q. We are on the subjects of distribution of reports and where the reports went, which I think you testified on direct went directly to research departments. Are you now saying that it is correct that the scientific research was first funded through the lawyers in the US. Is that a correct statement?
A. I'm telling you what I know? I told you that I'm categorically aware of what happened at the point of distribution from South Hampton. There may have

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

been some
17 intervening process, which I may or may not know about, and
18 some of this is new to me, but I don't find it very
19 surprising.
20 What I am telling you that I do know is that
21 the scientists did receive those documents, and they did
22 review their contents, and they have spoken to me and all
23 of my scientists at various points in time about the
24 research that we have conducted and the reviews that they
25 made of our reports.

3611
1 And, indeed, our library is a public library to
2 any member of our company. And we have many, tens, if not
3 hundreds, of people passing through the US and through our
4 library, and there is no secrecy, no barrier. It acts
5 like a public library. Any visiting scientist has access
6 to and will pull down any and all reports that he chooses
7 to look at.
8 So I'm talking from a purely scientific
9 standpoint about the knowledge. I know the scientist had
10 the information that was exchanged with the scientists. I
11 freely admit that I don't know all of intervening
12 procedures, and some of what I'm seeing here is knew to
13 me, but I can't recreate the context. It was thought
14 appropriate to have these intervening funnels or flows of
15 information.
16 Q. Isn't the point of this series of documents, not that
17 a Brown & Williamson researchers, the scientists, would be
18 deprived of access, but the attorneys who are involved as
19 plaintiffs attorneys would not have access to the research
20 documents. Isn't that what this is saying?
21 MR. BERNICK: Objection, lack of foundation.
22 Calls for him to basically speculate concerning what's
23 going on in the US legal system.
24 THE COURT: I don't know that he has knowledge
25 to testify to it, so I'll sustain the objection.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3612

BY MR. KRISTAL:
Q. Can we bring up Exhibit 1910?
Now, you mentioned the CTR, did you not.
Council for Tobacco Research?
A. Yes.
THE COURT: Do you have much more?
MR. KRISTAL: I have about 15 minutes.
THE COURT: Why don't we take a break, we'll stand in recess until 25 after. Same rules apply, don't talk about the case among yourselves nor with anyone else.
(The jury was returned to the courtroom and the following proceedings were conducted in open court:)
THE COURT: Mr. Kristal, you indicated there was some need for --
MR. KRISTAL: Yes, your Honor, exhibit 3040 is entitled fact memorandum, regards the National Cancer Institute less hazardous program, which Mr. Read had testified about. And there was some portions in there I wish to show to Mr. Read what they are.
Are attorneys for R.J. Reynolds Jones, Day, Reavis and Pogue relaying in the memo what Dr. Senkus told them, so I would submit it's an admission. It's coming directly from Dr. Senkus, who was obviously, at the time, an employee of RJR. And I believe he was the chief scientist. I'm not exactly sure, though.

3613

THE COURT: What would the objection be?
MR. BERNICK: A series of them. One, I just heard a representation that at the time those statements were made Dr. Senkus was an employee of R. J. Reynolds was that the representation --
MR. KRISTAL: I said I thought he was.
MR. BERNICK: My recollection is Dr. Senkus had retired by then.
MR. COUGHLIN: He had retired.
MR. BERNICK: So he was not an employee at the time?
I have a series of objections. The

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

document
wasn't designated. We had a proceedings to designate.
This is a sandbag.
Second, this is a lawyers document. Lawyers analyze things for their cases. I know the court has ruled it is not longer privileged that does not control admissibility under 403. A lawyers thoughts are about various issues, do not get in front of the jury, what lawyers say isn't evidence.
THE COURT: What was Senkus's position at the time?
MR. KRISTAL: I'm just informed and I don't doubt that he was not, I thought he was employed at RJR. I'm being told he was not.

3614

MR. BERNICK: These were lawyers trying to understand complex issues when they got into a case and record some thoughts for further follow up. It's the classic kind of thing that shouldn't be in front of a jury.
MR. KRISTAL: I think the issue turns or falls on whether or not the statement is a statement of RJR or not.
THE COURT: Well, the first statement, the first and second statements on page 6 and 7 are both statements that seen by Senkus, and if he's not an employee, unless there is some showing he is otherwise authorized to speak for them, I would sustain the objection.
MR. KRISTAL: It was really the only portion.
THE COURT: Those are the only 2 you are talking about.
MR. KRISTAL: There were 3. All of them did relate to things that Senkus had told the lawyers.
(Brief recess.)
(The jury was returned to the courtroom and the following proceedings were conducted in open court:)

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

THE COURT: Okay. Mr. Kristal. If the jury will be seated.

MR. KRISTAL: Thank you, your Honor.

3615

Q. Mr. Read, with respect to CTR, do you know Dr. Leo Abode? Have you seen his name with respect to CTR research that was being conducted?

A. I'm afraid I haven't.

Q. Do you have any knowledge of the central nervous system research he was conducted regarding nicotine and its effects on the central nervous system for the CTR?

A. No, I do not.

Q. You mentioned MAI the Microbiological Associates, Incorporated, that research?

A. Yes.

Q. And that involved tense of thousands of animals, and it was a tobacco smoke inhalation study, correct?

A. Correct.

Q. Did anybody from the attorneys representing Brown & Williamson and BAT show you any documents relating to CTR, and particularly the tobacco industry's attorneys reaction to the work at MAI?

A. Of course I've seen lots of documents. To the best of my recalling I don't think I ever --

Q. Do you know who Dr. John Kriesher is?

A. I do not.

Q. Do you know anything about Dr. Carol Henry or David Corey's work for MAI?

A. I have seen a publication that represents their work,

3616

that went into the public domain, yes.

Q. Do you know anything regarding the circumstances surrounding the termination of the MAI work. Do you know anything about that, by CTR?

A. I don't have any details on it.

MR. KRISTAL: Thank you, that's all I have, your Honor. Thank you. Have a safe trip home.

THE WITNESS: Thank you very much.

MR. BERNICK: May I proceed, your Honor.

THE COURT: Yes.

BY MR. BERNICK:

Q. I want to show you first, Plaintiff's Exhibit 2002. Remember that that was the memo from Mr. Wells

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

that talked
about the possible document procedure. You remember that?
A. Yes, I do, yes.
Q. That was in 1979, right?
A. Apparently, yes.
Q. Okay. Then there was a second document in 1985 that
Mr. Wells wrote regarding the possibility of shipping
certain documents back to England in 1985. I'm sorry, do
you recall that?
I think actually it was the second page?
A. Yes.
Q. That was --
A. Yes, I do.

3617
Q. This is some of the questions right there.
I think you said during the course of your
cross examination, that you had dealings with the Brown &
Williamson scientists that lead you to certain conclusions
about whether the scientists were still getting the
documents during this period of time, and subsequently?
A. Yes, I do.
Q. Can you just tell the jury what kind of contact you
had with Brown & Williamson's scientists during those years
that would lead you to know whether or not they were
getting your research?
A. Through '79, through '85, that period.
Q. Or just tell us the period of time during which you
had contact with Brown & Williamson scientists that would
enable you to express views on what it is that they knew?
A. Well, I can only speak frankly to the period I worked
at South Hampton, which was '76 to '85 and end of '91
through '98.
Q. So that would include the period of time we are
talking about here?
A. Absolutely, yes.
Q. What contact had you had with Brown & Williamson's
scientists so that beyond what you sent them you knew that
they got it?
A. Well, within the company we have, and have had, many

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

joint projects. And there would be research on these moving from different parts of the world and BAT to South Hampton and from South Hampton to other parts of BAT. We had at least once a year, and for quite a significant period, twice a year bi-annual reviews of our research programs, where all the research scientists stood up and presented their work in front of visiting scientists from the other parts of the group.

We had numerous conferences that were held in South Hampton or other parts of the world we attended. We were intimate, I can't say we were in everyday contact, but I would be very surprised if I didn't speak to a B and W scientist at least one once a month. And when you consider South Hampton at one state of over 380 people working in the research center, that is one heck of a network for exchanging information. And I never once was told, or brought to my attention, that someone in Brown & Williamson wasn't aware of our researchers couldn't get access to our reports, or indeed never saw our reports. Never once did that come to my attention.

Q. Go back to even the first page of this document itself, 1985 the documents being written, it says on Tuesday, January 15, 1985, I talked with Earl Kohnhorst. Was he a scientist?

A. Yes, he was a scientist. In fact, he was head of the



research, development and engineering, I think, at that time.

Q. About engineering and scientific reports held by the RD&E department.

Now, what was the RD&E department that held the reports that are being discussed in this memo?

A. Well, all I can say, it looks to me it's the Brown & Williamson research, development and engineering, that's

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

what they had on all their documents; that's what they called their research center. And when they sent us their report, they were always qualified as emanating from RDE, research, development, and engineering.
Q. Does this document talk about they are being held by the Legal Department?
A. It doesn't to me.
Q. Now, subsequent to that, there were some documents that were shown to you, Exhibit 2823. This is dated January the 10th, and this is the one, this is the one that talks about distributing the reports to this, to this Mr. Maddox. Do you recall that?
A. Yes, the Kendrick Wells/Prichard communication.
Q. You were then shown that by April of the same year. This also is about report distribution of the same year. And this now says that the procedure has been changed?
A. Correct.

3620

Q. And in the future it says each report will come directly to me, whose Mr. Kohnhorst?
A. And that's what I said in my earlier testimony. It will go to Earl who was a member of the research community.
Q. So January we have the memo about its going to the lawyer first; by April of the same year it's now back to Mr. Kohnhorst?
A. That's what it appears to say, yes.
Q. And again, in October, we now have again now Mr. Thornton writing.
Again, they should be sent to Kohnhorst if it is attended, a copy should be sent to B and W. Thanks all again in 1985?
A. Correct, yes.
Q. Now again, all these documents and these issues about how the reports happened to get routed, did they have any impact whatsoever on the course and nature of the scientific program at BATCo?
A. Certainly not.
Q. Did they have any impact whatsoever, the scientific program at BATCo, did BATCo just develop that program

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

unilaterally, or did they have to obtain the approval of other scientists in the group?
A. It was a combination, it was funded by the rest of the group and approved and endorsed by the senior scientist

3621

and senior scientific representatives of the rest of the group.
Q. Has any of what we discussed here had any impact historically as you were there at the time in the process of even getting a professional from Brown & Williamson's scientist on the course of the research?
A. Not in the slightest.
Q. I want to ask you about the Harrogate work. You were shown a memo here, this is Plaintiff's Exhibit 485. Do you recall this was in October, 1965 memo where somebody writing says, let's see, I don't know if I've got it. This is the first one; this is the one that discusses it. There is another one that discusses the possibility of slanting the Harrogate report. Do you recall that?
A. Yes, I do.
Q. And there was back and forth about whether you had seen a draft. Do you recall that?
A. Yes.
Q. Have you in fact reviewed the final article that was actually published by Dr. Day?
A. Yes, I have.
Q. This is Exhibit GF 4.
A. The one published in '66?
Q. Right. And this was in the British Journal of Cancer. Is that a peer review journal?

3622

A. Yes.
Q. Is it a prestigious peer review journal?
A. Yes. One of the best, if not the best, at the time.
Q. And does this discuss the mouse skin painting results that had been conducted at Harrogate?
A. Yes, it does.
Q. During the course of the article, can you tell us whether or not the work that was done at Harrogate that was published here diminished the significance of mouse skin

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

10 painting, enhanced mouse skin painting results, progressed?
11 What was the impact of this research?
12 A. Well, first and foremost, it is an extremely robust
13 study.
14 Q. When you say robust, what do you mean?
15 A. It looked at an enormous number of animals to
16 insurance statistical significance. It was designed to
17 look at the effect of aged condensate versus fresh
18 condensate and it's ability to induce Philip Morris,
19 because there had been criticisms that in previous mouse
20 skin painting studies people had collected condensates, and
21 held them for up to a month, or he even longer, before they
22 applied them to the backs of mice.
23 THE COURT: Let me just -- why don't you kind
24 of bring it?
25 MR. BERNICK: I'll try to bring it into focus.

3623
1 Q. The results of these studies --
2 A. Yes.
3 Q. Did the results of these studies show that there was
4 criticism that was warranted to mouse skin painting? Did
5 it diminish the force of mouse skin painting?
6 A. It even underpinned the information in its utility.
7 Q. Was that something unfavorable to the use of mouse
8 skin painting?
9 A. Not unfavorable to mouse skin painting.
10 Q. As a scientist looking at the content of the report
11 and the strength of which the conclusions were expressed,
12 did you see any evidence that somehow this report was
13 slanted in anybody's favor?
14 MR. KRISTAL: Objection, your Honor.
15 Foundation.
16 MR. BERNICK: As a scientist reviewing the
17 findings in the report.
18 MR. KRISTAL: Same objection.
19 THE COURT: I'm going to sustain the objection.
20 BY MR. BERNICK:
21 Q. Let plea just ask you if you went to the document,
22 Exhibit 574, that was shown to you, a subsequent meeting in
23 March of 1967, can we put on the Elmo for just a moment to

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

24 one that was shown to you about Mr. Ramm reporting on Mr.
25 Ramm's thinking at a meeting. Do you recall that?

3624
1 A. Yes, I do.
2 Q. And this is a meeting that part concerned the work of
3 Harrogate and TRC?
4 A. That was my understanding, yes.
5 Q. If we take a look at the bottom of the page, the
6 second page, page 2, do you see how it is that the people
7 even internally, even at that meeting, regarded the
8 research of Harrogate. The research at Harrogate had gone
9 further than the previous work of Wynder and fresher
10 condensates had been used. The carcinogenic affect was not
11 an artifact due to storage.
12 Did that or did not that reflect the advances
13 that were made by the Harrogate work?
14 A. Clearly it did.
15 Q. There was also some information that was read to you
16 about the attitude, the reported attitude regarding mouse
17 skin painting, and I think this was pointed out.
18 Experts whom we have consulted all felt that
19 although the direct relevance of the mouse skin painting
20 work was open to question on a balance of probabilities,
21 it was likely to be helpful from the point of view of
22 human health to reduce the tar delivery from cigarettes.
23 As a result of any of the discussions that you
24 have seen involving the lawyers, as shown to you by
25 plaintiffs counsel here, was there any impact on the

3625
1 actual conduct of the continued mouse skin painting
2 program at Harrogate?
3 A. Not in the slightest, no impact whatever.
4 Q. You were asked some questions about Y-1, do you
5 recall that?
6 A. Yes, I do.
7 Q. And I think the questions were put to you as Y-1
8 being a genetically engineered tobaccos.
9 THE COURT: I thought his answer covered that,

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

so I don't want to deal with that again. I don't know that he brought out anything that you need to respond to on the Y-1.

MR. BERNICK: Can I ask one question. Well, I won't pursue it.

THE COURT: I don't want him just to repeat what he already said.

MR. BERNICK: It was really a little bit different, but if your Honor doesn't believe it is appropriate I won't pursue it.

Q. Finally, there was one question that was asked of you about whether BATCo had done in-house biological research, that is, in its own laboratories, involving mouse skin painting. Do you recall that?

A. Yes, I do.

Q. And I think your answer was that the mouse skin

3626

painting was contracted out with Batelle?

A. That's correct.

Q. Is there any significant difference to you as a scientist between doing the mouse skin painting work and the physical confines of the company laboratory, versus doing it as an outside contract lab. Does that mean because it's outside contract that it's more or less valuable?

A. No, work should be conducted where you have the expertise to conduct it so that it is fully validated and is the highest possible standard. And at that time Batelle had the highest reputation for conducting this sort of work.

MR. BERNICK: I have nothing further, your Honor.

THE COURT: Thank you, you can step down. If you will just leave the book with us.

THE WITNESS: Sure, thank you.

THE COURT: Does the defendant wish to make in my interim argument.

MR. BERNICK: Yes, I have some brief remarks.

THE COURT: You can step down. Thank

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

you for
the time with us.
MR. BERNICK: We have seen some changes in
opening statement. We began with some theories that

3627
plaintiffs were advancing about biological research.
In their initial witnesses, they pursued the
theory that the research was restrained, it was limited.
We have now produced a witness, and indeed there have been
other witnesses as well, who have specifically addressed
that claim that show the research was restrained.
That claim is at odds with more than 40 years
of state of the art research that was conducted by BATCo
and by others as part of a world wide effort to develop a
safer cigarette.
And that testimony was not subject to a single
point of cross examination here this afternoon. Not one.
So now we have a new theory. Now the new
theory and the new claim is, this is -- somehow the
lawyers managed to control all of that research. And that
was the entire focus of the cross examination.
Now, the lawyers are in control. They have to
gauge the plausibility that somehow the lawyers are going
to control international research. But we still want to
respond to those claims, and we have responded to those
claims, the lawyers fretted, the lawyers were concerned,
but the work got down. Not a single cross examination
produced evidence that the work didn't get done.
THE COURT: On behalf of the plaintiff,
Mr. Kristal.

3628
MR. KRISTAL: In my first year of law school a
professor told me if you are going to become a litigator
keep your eye on the ball. I would suggest that to all of
you.
The question here is not whether all

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

this
research was done; it was done. The question here is not whether the scientists at B and W saw the research coming from England; the issue is what was the influence of the US tobacco industry attorneys to preserve the tobacco industry position that this was an open question regarding disease causation.

That, I submit, is what Mr. Read's testimony is critical on. Mr. Read is the nicest guy in the world. He was put up on as a witness on attorney influence, that is what he testified about, without really knowing about it.

When the attorneys in the US got wind of the Harrogate reports coming out, they admittedly -- the documents say they were trying to slant it, they were trying to slant the research. We don't have those drafts, but that was their intent.

When the US lawyers met with the United Kingdom lawyers, the lawyers of the American tobacco industry would prefer that we in the UK did nothing to inform the public, that we should actively deny the causation hypothesis. Why not? Because it was not medically sound.

3629

By taking any other course of action we were giving support to the enemies in the United States.

The whole name of the game was to keep the ball in play, make it an open question until perhaps you could have a safe cigarette. All of this research was trying to do that while the ball was in play.

Meanwhile, our clients, the beneficiaries and the participants in the funds, were getting disease and our funds were damaged.

THE COURT: Thank you.

Would the defendant call your next witness.

MR. LOMBARDI: Yes, your Honor, Richard Carchman.

RICHARD CARCHMAN

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

called as a witness by and on behalf of the Defendant, being first duly sworn, was examined and testified as follows:

THE COURT: If you will take a seat and if you will state your name and spell your last name for the jury.

THE WITNESS: My name is Richard Carchman, and my last name is spelled C-A-R-C-H-M-A-N.

CROSS EXAMINATION

BY MR.LOMBARDI:

Q. Good afternoon, Dr. Carchman?

3630

A. Good afternoon.

Q. You are recently retired from Philip Morris, is that correct?

A. Yes.

Q. When did you retire?

A. About a month ago.

Q. And how old are you now?

A. I'm pushing 57.

Q. Why did you retire?

A. They offered an early retirement program for the company, and I took advantage of that.

Q. What was your position at Philip Morris at the time that you retired?

A. I was a Vice President in research, development and engineering.

Q. How long have you been there at the time of your retirement?

A. About ten years.

Q. Going back to about 1989 or so?

A. Yes.

Q. Do you still have a relationship with Philip Morris?

A. Yes.

Q. What is your relationship?

A. I'm providing some consulting to the company in three areas.

3631

Q. Okay. Now are you here to talk to the jury about various issues related to Philip Morris, such as product development, biological research and in ingredients?

A. Yes.

Q. Before we get into that, Dr. Carchman, would you tell the jury a little bit about your educational background,

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

starting with college?
A. I graduated from Long Island University in New York in the mid-60's. I had, at the time while I was in college, a full time job working at the Institute for Cancer Research at Columbia; that went from about 1964 to '68, so I overlapped that. And so in 1968 I left the Institute and went to graduate school.
Q. Okay. And what year did you get your degree at Long Island University?
A. 1966.
Q. And then your graduate degree, where did you attend school for that?
A. I went for my doctorate at Down State Medical Center, it's part of the State Universities of New York system.
Q. And did you obtain a doctorate?
A. In 1972.
Q. What was the subject of that doctorate degree?
A. It was in the Department of Pharmacology, and it had to do with trying to understand some basic cellular



mechanisms in terms of how cells, in my particular case, how cells in the adrenal glands secretes steroids.
Q. After you finished your work on your Ph.D. did you do post doctoral work?
A. Yes. I had a couple of real job offers, but instead, I applied for and obtained a fellowship at the National Cancer Institute to do some additional training.
Q. And that's part of the National Institute of Health?
A. Yes.
Q. And when did that begin, what year?
A. '72.
Q. And what was the nature of the work that you did at the National Cancer Institute?
A. I was in the laboratory of molecular biology at the NCI, and we were studying very fundamental mechanisms of cancer causation, and then trying to figure out how to stop it or reverse it.
Q. Did you leave the National Institute of Health for other employment at some point?
A. Yes.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

Q. And where did you go?
A. I went to the Medical College of Virginia in Richmond as an assistant professor.
Q. When did you start the Medical College of Virginia?
A. In '74.

3633

Q. And when did you stop working there?
A. About 15 years later.
Q. Up until the time you went to Philip Morris?
A. Yes.
Q. While you were at the Medical College of Virginia, what were the areas you taught in?
A. I taught both to the graduate students, medical students, attendings, interns, residents, in the areas of pharmacology, toxicology, antibiotics, anti-cancer drugs, cardiovascular pharmacology, cardiovascular toxicology, molecular pharmacology, molecular toxicology.
Q. I think that's probably enough.
Did you also do some work while you were at the Medical College of Virginia at the Massey Cancer Center?
A. Yes.
Q. What the Massey Cancer Center?
A. The cancer center is one of the few comprehensive cancer centers in the United States. It's funded by the National cancer Institute, part of the NIH, and I was the Associate Scientific Director of the institute.
Q. And did your work with the Massey Cancer Center involve work for yourself, in terms of studying the causes of cancer and other issues related to cancer?
A. Yes, both with basic scientists and clinicians.
Q. Now, during your time at the Medical College of

3634

Virginia, did you also maintain relationships with outside health organizations that you worked with?
A. Yes.
Q. And to try to expedite this, doctor, I'm just going to try to read some off. And my question at the end would be, are these some of the organizations you worked with.
The National Cancer Institute, the National Institutes of Health, National Institute for the

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

Environmental Health Sciences.
A. Yes.
Q. National Center for Disease Control?
A. Yes.
Q. The American Cancer Society?
A. Yes.
Q. The American Heart Association?
A. Yes.
Q. United States Department of Defense?
A. Yes.
Q. The United States Environmental Protection Agency?
A. Yes.
Q. And did some or all of that work relate to the study of cancer and it's causes?
A. Some of it did, yes.
Q. Now, at some point you came to Philip Morris. Could you tell the jury the short version of how you came to go

3635

to Philip Morris?
A. While I was at the medical school, Philip Morris R and D is just down the road from the medical school. And many of the scientists would come to the medical school to take courses to go to seminars, and some of them would actually come to the medical school, the graduate program to get degrees, masters degrees, doctorate degrees, continuing education.
And one of the R and D scientists applied to the graduate program; he got in, took all the courses, and then decided he wanted to work in my laboratory.
He did that for several years, finished his work, defended his thesis, got his Ph.D., published a couple of papers in the peer review literature, and then went back to Philip Morris.
He we maintained a pretty good personal and professional relationship, and then in 1988 he asked me if I would consider leaving the University and coming to work at Philip Morris.
Q. And did you leave the University at that time?
A. I took a leave of absence, a sabbatical for a year. I spoke to my chairman, the Dean, told him what I wanted to do, and I said I felt comfortable if I was able to

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

take a
look see at Philip Morris. I had been at the University
forever, and I just really wasn't sure whether I would fit

3636
in. And so they agreed, and I consulted Philip Morris, and
so I took a leave of absence from the University and went
to work for Philip Morris.
Q. And how long was the leave of absence?
A. One year.
Q. What did you do during that year at Philip Morris?
A. I had several areas of responsibility. One was to
really dig into their biological testing program, how they
looked at ingredients, that I would say was probably my
primary responsibility.
Q. And did you ultimately make a decision to go to work
at Philip Morris full time?
A. Yes.
Q. Okay. And that was at the end of 1988?
A. No.
Q. What year was it?
A. 1989.
Q. I'm sorry, after you decided to go full time at
Philip Morris, did you continue your contacts with some of
these outside research organizations?
A. Yes.
Q. For instance, the Medical College of Virginia?
A. I still had affiliates, appointments in pharmacology,
toxicology and bio statistics, I still had graduate
students I still taught.

3637
Q. Okay. At the National Institute of Health?
A. I still had some activities going on in terms of
training programs.
Q. The Department of Defense?
A. I had a very large project that I had been working on
that actually took at least two more years to finish up
after I left, and Philip Morris allowed me to do that.
Q. Did you continue your work with studying cancer and
the causes of cancer after you went to Philip Morris?
A. Yes.
Q. Now, while you were at Philip Morris, did

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

you serve
on any governmental boards or committees concerning smoking
and health issues?
A. I was, I was asked to serve on a committee by the
Canadian Department of Health. This would be like the
federal, the Federal Department of Health for the
government of Canada.
Q. And what kind of people were part of that committee?
A. It was primarily public health officials.
Q. Was Neal Benowitz on that committee?
A. Yes.
Q. Dietrich Hoffman?
A. Yes.
Q. And when were you asked to serve on that committee?
A. Last year.

3638

Q. Are you still serving on the committee?
A. Yes.
Q. Let's turn to your arrival, the time that you were at
Philip Morris 1989 to almost the present, Dr. Carchman. Is
one of the areas that you were involved in at Philip Morris
the design of a safer cigarette?
A. Yes.
Q. And were you involved in that process throughout your
time at Philip Morris?
A. Yes.
Q. As part of your duties, once you got to Philip Morris
did you learn about the history of Philip Morris's work
with safer cigarettes?
A. That was part of my responsibility.
Q. And how did you go about doing that?
A. I read documents, I spoke to the people who were
involved. There were people who had been there for 30, 40
years, in some cases, who were intimately involved in the
very beginning of these projects, and during the course of
these projects.
So I sought out these individuals. They
weren't just in Richmond, they were in various places
around the world. So between reading documents, speaking
to these individuals, and going to meetings is how I
familiarized myself with them.

3639

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. What are the general areas in which Philip Morris's safer cigarette work has fallen?
A. I could reduce it to simply four areas; there are others but these are four big areas. One has to do with general reduction, another one is selective reduction, another was a commercial attempt to remove nicotine from the cigarette, and the last area has to do with electrically heated cigarettes.
Q. I'm going to put up a cart that we have prepared, and that's the list of areas you have just set forth, is that correct?
A. Yes.
Q. Before we get to that list, Dr. Carchman, does Philip Morris, and has Philip Morris made any assumptions about whether smoking causes disease as part of its work to develop a safer cigarette?
A. Yes.
Q. What assumptions has Philip Morris made?
A. That it does cause disease.
Q. Why does Philip Morris make that assumption?
A. There was no way to fruitfully proceed with trying to develop a safer cigarette unless one went in with that kind of assumption.
Q. Okay. Now Dr. Carchman, does smoking cigarettes cause disease such as lung cancer?

3640

A. I think the answer is yes, with an explanation. And the explanation goes the following way.
If you, if you equate, as many people do, causation with increased risk, okay? Smoking has been associated with a variety of diseases. These epidemiological studies increased risk, and most people think if it's an increased risk it causes a disease. If you do that then the answer is yes.
And I would say for many years, long before I came to Philip Morris, that we have basically agreed that smoking is a associated with lung cancer and certain other diseases based on these statistical associations.
So, in a sense, that's really not new.
But for people and the public health community,

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

they consider causation and increased risk as being the same. And I think from a public health perspective that's fine, that's okay to do.

Q. Doctor, from a scientific standpoint, is there anything more that needs to be done to establish causation?

A. Yes.

Q. What is that?

A. There are at least two things that I think are critically important. One, I mean people have been evaluating cigarettes and disease, smoking and disease for decades. See, you have to figure out, what are the things

3641

in smoke that may be causing the disease? It could be one thing, it could be could be more than one thing.

The second is, if you identify these things, how are they causing this disease?

So you have two pieces to this big puzzle. What are the substances and how are they doing it?

Q. When you talk about the "how" part of it, is that sometimes referred to by researchers as the mechanism of action?

A. Yes.

Q. Why is it important to you, as a scientist at a tobacco company, to know what constituents of smoke may be causing disease?

A. There are at least two critical reasons for it.

One, is if somebody comes in and gets sick, and you think, or somebody thinks that smoking caused that illness, knowing what the constituents are that are responsible for it and the mechanism, helps you, because there is or there are very few diseases, very few. There are some exceptions in terms of infectious diseases, but diseases like lung cancer and cardiovascular disease. Anyway, there is one single cause, there are numerous causes, you have to figure out what's doing what, and you can't do it until you identify what particular

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

25 constituents and the mechanisms that are involved.

3642

1 So that's one reason for getting at the
2 scientific piece of this.
3 The second reason is, if we are going to try to
4 develop a safer product, rather than being sort of like
5 the blind man in the room with the elephant groping around
6 looking for what you really can't see, knowing what it is
7 really helps you. If you know what it is, you have a
8 better shot of either reducing the amount or pulling it
9 out.
10 Q. As of today, as you sit here today, do you know of
11 any reputable scientist in the world who claims to know
12 what constituent of smoke causes disease?
13 A. No, I don't.
14 Q. As you sit here today, do you know of any reputable
15 scientist in the world who claims to know the mechanism by
16 which smoke causes disease?
17 A. No, I don't.
18 Q. Has the Surgeon General of the United States, in all
19 the reports that he's issued on smoking and disease, ever
20 identified a specific constituent on the mechanism by which
21 smoke causes disease?
22 A. No, he hasn't.
23 Q. Over the years, has Philip Morris and the other
24 tobacco companies taken a position as to whether the
25 scientific community should continue to look for the

3643

1 mechanism and the constituents that may cause disease?
2 A. Yes, we have.
3 Q. Why?
4 Let me ask you first, what's the position?
5 A. I think the issues are so complex that both
6 government, universities, and industry have to continue to
7 work together to figure out the answers to the questions
8 you have been asking me. What are these constituents? How
9 do they work?
10 And, like I said, this work has been

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

going on
for decades. We have made some progress, but we clearly have not gone far enough.
Q. Okay. I want to turn back to the work that was done at Philip Morris to develop a safer cigarette. And let me tell you, the first 2 on the chart are things that the jury has heard about before, so I want to focus your answers really on the Philip Morris experience, if you would.
The first one on the chart is selective reduction. What do you mean when you talk about selective reduction?
A. Selective reduction, in the example given here, is the public health community has identified a number of constituents, and one of them is this staff or benzopyrene, which was initially considered to be to most potent carcinogen in tobacco smoke, and probably responsible for

3644

lung cancer.
And so we try, a number of people tried both inside and outside the industry, to either reduce or eliminate this kind of material selectively.
Q. Okay. Does that mean it's an attempt to eliminate just the one constituent?
A. Actually, this is a brother or sister of a whole family of compounds, polyaromatic hydrocarbons, this is the one they focus on. If you could attach this one, you could probably take care of the other ones as well.
Q. Just to use benzopyrene, when did Philip Morris start work to eliminate benzopyrene?
A. In the 50's.
Q. And what prompted Philip Morris to that action at that time?
A. Was the concern expressed by scientists and public health officials that this was the most potent carcinogen in tobacco smoke.
Q. And was Philip Morris able to removed benzopyrene in the 1950's?
A. Not selectively.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

Q. And what difficulties did Philip Morris have effectively removing benzopyrene?
A. As you look at tobacco smoke, it exists in at least two forms; one is the gas phase and the other is the

3645
particulate phase.
So when you burn wood or paper you can see particles and you can see smoke. And the benzopyrene was in the particles, so we had no way of reaching into the particles to pull out the benzopyrene and nobody had figured out yet how to really selectively reduce the product of benzopyrene.
Q. We won't go through all the selective reduction attempts at Philip Morris, but just in general, did selective reduction appear to be a good way for Philip Morris to remove harmful smoke constituents?
A. No.
Q. Let's move on. The next on the list, which is general reduction of tar, do you see that?
A. Yes.
Q. When did Philip Morris start work with the general reduction of tar?
A. That started in the 50's as well.
Q. And what prompted Philip Morris to start work with the general reduction of tar?
A. Well, I think you try not to put all your eggs in one basket. And nobody really knew whether the selected filtration would work or not, so I think they also proceeded along a line of development, trying to reduce a variety of things.

3646
Q. Okay. Now, have you supervised the preparation of a chart that summarizes the work done on the -- excuse me, the general reduction of tar?
A. Yes, I have.
Q. Is that the chart?
MR. STRITMATTER: Your Honor, I would object to this demonstrative exhibit. It is not an accurate representation of the facts because it did not take compensation into consideration, what the smoker

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

is
actually receiving in tar?
THE COURT: Let me ask this. I'll ask that you take the chart down until you ask him the question directly. I think this is one way there would be more of a tendency for the chart to be more leading.
MR. LOMBARDI: Okay. I'll ask a few foundation questions.
Q. Over the course of time, from the 1950's to the present, Dr. Carchman, what has happened to tar yields of Philip Morris cigarettes?
A. They have come down.
Q. And how much have they come down, just in a general sense?
A. More than 50 percent.
Q. And what techniques have been used by Philip Morris to bring the tar yields down?

3647

A. Just by way of illustration, filtration, ventilation, punching holes in the paper, of the cigarette paper, the use of expanded tobacco, puff tobacco, those are some of the mechanisms that we in the industry have employed.
Q. And does this chart reflect those, those techniques and that fall in tar yield?
A. Yes.
MR. LOMBARDI: Your Honor, may I put the chart up?
THE COURT: Yes. And I'll note the objection. I think your objection goes to weight. It may be a grounds for cross examination, but it is not a ground to exclude it.
MR. STRITMATTER: Thank you, your Honor.
THE COURT: I'm sorry.
Q. All right. On the right hand side of the chart there is a graph; and what does that depict, generally, Dr. Carchman?
A. This depicts the fall over this period of time in years of the tar delivery of Philip Morris cigarettes.
Q. And it actually starts from the 19 -- just before

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

1970, is that right?
A. On this chart here, yes.
Q. Okay. And why is it that the chart begins just before 1970?

3648

A. This has to do with the implementation of the Federal Trade Commission tests.
Q. And how far did tar levels have fallen to date?
A. So in around 1967, I guess it was close to 21 milligrams, and then today the average is less than 12.
Q. Okay. Now, on the left hand side of the chart are some of the techniques that you described. And again, the jury has heard about some of these techniques with respect to other manufacturers. So just I want you to focus on Philip Morris. Are those all techniques that Philip Morris used as well?
A. Yes.
Q. And just a couple of notes related to Philip Morris. Did Philip Morris make any particular innovations on any of these techniques?
A. I can use two for illustrative purposes.
Q. Please do?
A. The ventilation described here, Philip Morris patented a laser perforation procedure for punching holes in the cigarette paper.
Q. And how was that an innovation?
A. One, it allowed with a greater degree of confidence that you had the holes going where you wanted them to go and that you had a consistent kind of perforation.
Q. And what's the second innovation that Philip Morris

3649

made?
A. And if we look down here at the expanded tobacco, Philip Morris patented a process for expanding tobacco.
Q. And what was the process that Philip Morris patented?
A. We call it the DIET process, D-I-E-T, for carbon dioxide expanded tobacco. They use carbon dioxide to punch up the tobacco.
Q. Is it also called dry ice expanded tobacco?

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

A. Yes.
Q. How much money has Philip Morris spent over the years to bring down the tar levels in its cigarettes?
A. Hundreds of millions of dollars.
Q. Now, the jury has heard some testimony in this case about whether tar reduction of this nature does a smoker any good.
Have you studied that question as part of your work with cancer?
A. Yes, I have.
Q. And do you have an opinion as to whether the lowering of tar yield has had an effect, positive or negative, on smokers?
A. I do.
Q. What is your opinion?
A. I've reviewed primarily all of the epidemiology data, chemistry and biology data, government reports from 1950 up

3650

until the present time. The going in concept from the very beginning was that less is better. And when Professor Wynder and Professor Graham published the first large study in the United States in 1950, very quickly the assumption they were making that the problem, the bad stuff was the tar. And if you could reduce the amount of tar that the smoker got by whatever mechanism, you would reduce the risk for at least lung cancer.
So that set the stage. That principle is an important principle in pharmacology and toxicology. And it goes something, the dose is everything. The more you have in this case, the worst it's going to be. And the epidemiology data over the years has tended to support that.
In around the late 60's, Brosen and his associates at Roswell Park and Professor Wynder at Sloan Kettering basically published two additional key papers basically showing if you compare smokers of filter cigarettes with smokers of non-filter cigarettes, there is

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

a reduction of lung cancer risk, if you smoke the filter cigarettes.

That very quickly led to a series of meetings and reports, US Surgeon General's reports, very quickly recommending, the Surgeon General recommending several times that tar reduction be something that is encouraged

3651

and implemented.

There was a large National Cancer Institute sponsored study called the Tobacco Working Group trying to advance that kind of observation; even more to come to the future where we are now, because the same kinds of observations that were made 30 years ago are still being made today.

In a recent paper, 1998 by Cutter and Associates in the Journal of Lung Cancer, looking at the subjects in the Philadelphia, Pennsylvania area, comparing filter to non-filter smokers, and if you look at the difference in tar delivery between filter and non-filter, non-filter has a higher tar delivery. Basically they found a 54 percent reduction in lung cancer risk, so that's the science.

In 1998 --

Q. Let me interrupt you for just a second, doctor, and ask you, is there a particular type of study that you consider more useful than others in evaluating the effect of low yield cigarettes?

A. The only thing that's available now were these epidemiological studies. And because they capture everything, they capture the real world, they capture how people smoke, how much they smoke, and they look at it over a very long, a very long period of time. They look at

3652

different kinds of people from different parts of the country, different ethnic backgrounds, different kinds of occupations, whether they drink, whether they exercise, whether

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

they are
4 Japanese, whether they are American, Asian Americans, whatever,
5 you have an ability to look across a wide spectrum of
6 demographics and get some answers. That is really the only way
7 that we have available to us today to address that question.
8 Q. Now epidemiological studies, you said, have been
9 performed over the past 30 years or so. What type of
10 diseases have these studies tracked?
11 A. Well, with smoking, lung cancer has been the
12 principal one, though there have been many large studies on
13 cardiovascular disease, other kinds of cancers and
14 respiratory diseases other than lung cancer. And just as
15 an example --
16 Q. Now you mentioned the United States Surgeon General
17 and his comments about low yield cigarettes. Have other
18 governments made comments about low yield cigarettes?
19 A. The US Surgeon General has done this numerous times
20 in their reports.
21 In 1998, last year, the Department of Health to
22 the United Kingdom basically issued a report asking for
23 low yield cigarettes in terms of disease, risk reduction.
24 The New Zealand Department of Health has just issued a
25 similar report, and Richard Tito, whose a tobacco control

3653
1 public health official epidemiologist, last year basically
2 said he believes we should be introducing American blended
3 low yield cigarettes into the rest of the world. He was
4 talking about the developing countries.
5 Q. Are you familiar with allegations relating to smoker
6 compensation. You have heard an objection about one
7 recently?
8 A. Yes.
9 Q. Just to remind the jury what is smoker compensation
10 and what is the allegation as it relates to low yield
11 cigarettes?
12 A. For, first of all, the compensation question is an
13 old question. In the time that I've been allowed

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

life and
14 reading about science, they have been talking about
15 compensation for at least that period of time. And it has
16 to do with how people smoke the cigarette, how many
17 cigarettes they smoke, how many puffs per cigarette they
18 take, how deeply they inhale, the size of the puff, all of
19 these things have been talked about for more than, for more
20 than 30, for more than 30 years.
21 Q. Okay. Now, do epidemiological studies take into
22 account in any way the possibility of smoker compensation?
23 A. That's one of the reasons why I think today it's the
24 best kind of study, because it was nestled within it, how
25 people use the product. And in fact, in 1996 in the

3654
1 Federal Trade Commission monograph number 7, sponsored by
2 the National Cancer Institute, Jonathan Sammet, one of the
3 expert epidemiologic experts in the world on lung cancer,
4 made that same conclusion.
5 Q. So if compensation does in fact occur, are these
6 epidemiological studies still valid in terms of their
7 assessment of the risk of low tar cigarettes?
8 A. Yes, and if I could just say a word.
9 Q. Please?
10 A. I've looked at over the 30 years where you had tar
11 deliveries in the 30 milligrams to where you have them down
12 today in the 11 milligram range, and compared the studies
13 in the these Eppy studies, with respect to the comparisons
14 made between filter, non-filter, high tar or low tar, the
15 risk reduction that's been seen over this 30 year period
16 has not diminished in any way.
17 Q. Okay, doctor, I want to return to our slide on the
18 methods used at Philip Morris. We have now talked about
19 the first two on the chart, the last two are the
20 development of a denicotine cigarette, and the development
21 of non-conventional cigarettes. Do you see that?
22 A. Yes, sir.
23 Q. Are those projects specific to Philip

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

Morris?
A. Yes.
Q. Let's talk first about the development of a

3655
denicotine cigarette. Are you familiar with a Philip
Morris denicotine product?
A. Yes.
Q. And what was that product called?
A. It was, there were 3 brands. It was called De-nic
was Next, there was a Benson & Hedges, and I think a Merit
brand as well.
Q. What is a denicotine cigarette?
A. It's a cigarette that from the outside looks like any
other cigarette. It's tobacco wrapped in paper, except we
have processed the tobacco to remove 97 percent of the
nicotine plus some other things.
Q. When was this product first marketed?
A. '89, '90.
Q. Okay. And why was it that Philip Morris was
interested in developing a denicotine cigarette?
A. Two related reasons:
One, at some point in the public health
community's discussions about the risk associated with
smoking, nicotine was raised as an issue with regard to
cardiovascular disease.
Secondly, because of the concerns that were
raised initially in this area, there was some consumer
interest, maybe in trying to see if one could develop a
so-called denicotinized product.

3656
Q. This one was first marketed in 1989. Was that the
first time Philip Morris tried to create a denicotinized
cigarette?
A. No, they had efforts under way for 20, 30 years.
Q. And were those efforts successful?
A. They were successful in removing nicotine. But the
result in product didn't look like tobacco or couldn't be
used in a cigarette.
Q. When did work first start on the on the project that
lead to the denicotine product that was marketed in 1989?
A. In about 1985.
Q. Have you supervised the preparation of the

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

time line
that shows the high points of that development procession?
A. Yes.
MR. LOMBARDI: Your Honor, I intend to put up the time line at this time.
THE COURT: Go ahead. And we'll see if there is an objection.
Q. That's the time line showing the development of the denicotine product?
A. Yes.
Q. What happened in 1985 that got Philip Morris going on a denicotine product again?
A. We bought General Foods.
Q. And that shows in the far left side of the screen, is

3657

that right?
A. Yes.
Q. And what was it about acquiring General Foods that led to the development of a denicotine product?
A. They have a decaffeinated products that they sell in the United States called Sanka, and the process that they use for removing the caffein was a supercritical carbon dioxide extraction process.
Q. Okay. Now, what was it about General Foods having Sanka coffee that led to the work on the denicotine cigarette?
A. Well, because Philip Morris R and D had been working for so many years in terms of trying to remove nicotine, a question was, could we take this, this commercialization of this commercial product concept, and use it for removing nicotine from tobacco.
Q. Okay. And what was the next thing that happened?
A. Oh, a boarding party, if you will, was sent from Richmond to Bamberg Germany where General Foods had the facility that removed the caffeine from the tobacco and these fellows, these scientists basically spent the next 18 months living in the pilot plant and in the factory sleeping on cots trying to see if they could implement with this facility the extraction of nicotine from

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

tobacco.
Q. Now the process that you described was called super

3658
critical extraction, is that right?
A. Yes.
Q. I don't want to get into all the details of how
that's done, is it fair to say that's a high tech process?
A. Yes.
Q. Was it a new relatively new process in 1985?
A. Yes.
Q. Okay. Now you said that Philip Morris scientist went
to Germany. Why was it that they went to Germany to work
on this product?
A. That's where General Foods had the facility.
Q. And in the photograph up there, there is a bag of
coffee that says Coffa Hog on it. What is Coffa Hog?
A. That is the European version of Sanka.
Q. What happened after the Philip Morris scientist spent
this is 18 months or so in Germany to develop a denicotine
process?
A. Basically the work that they, that they were doing
was very, very encouraging they came back and basically,
very quickly a pilot plant was constructed to then take
this step, take the next step in this process.
Q. So this was a new plant they were constructing?
A. Actually the pilot plant opened and they began
construction of the commercial, the commercial plant.
Q. Okay. And when you say a commercial plant as oppose

3659
to a pilot plant, what was the difference?
A. A commercial plant is oftentimes what engineers do
when they are developing a process. They start small, make
sure they get all the bugs out of it rather than start big
and figure they have one pipe connected to the wrong place,
so you basically set the pilot plant up, get all the bugs
worked out of it an scale up to the commercial entity.
Q. How long did it take to make the commercial plant?
A. It didn't take very long. As you can see,

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

if
10 they are go coming back in '87, this commercial
plant
11 construction begins in the fall of '87 and then by
the
12 first quarter of '89 the facility is open.
13 Q. You say that's not very long, that's about a
year and
14 a half?
15 A. That's not long for a facility of this size.
16 Q. And what was the capacity of this facility
in terms
17 of the amount of tobacco, denicotinized tobacco it
could
18 produce?
19 A. The extraction facility could handle 20
million
20 pounds of tobacco a year and the manufacturing
facility
21 could convert that extract, the tobacco, into
several
22 billion cigarettes.
23 Q. In the process that was put into the
commercial
24 plant, how much of the nicotine could be removed
from the
25 tobacco?

3660
1 A. About 97 percent.
2 Q. Now, did Philip Morris you have said Philip
Morris
3 began to market these cigarettes in 1989, is that
right?
4 A. Yes.
5 Q. Do you have up there a pack of the
cigarettes?
6 A. This is one of the three brands that we put
out in
7 test market in the United States.
8 Q. And that one is called Next, is that
correct? Is
9 that right?
10 A. Yes.
11 Q. Could you read the exhibit is WX-18?
12 A. It says Next, De-nic.
13 Q. Look at the bottom what you were holding
your hand
14 has the Exhibit Number WX-18, correct?
15 A. Yes.
16 Q. What happened to the product when I was it
was out on
17 the test markets?
18 A. There was initial consumer enthusiasm
followed very
19 quickly by consumer complaints about the taste of
the
20 products.
21 Q. These test markets, were there any in this
area of
22 the country?
23 A. Toledo was one of the test market sites.
24 Q. What were the complaints about the taste?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

25 A. Taste of the product. To people who smoked

3661
1 cigarettes, this was like drinking a Pepsi or Coke in which
2 the bubbles had gone out. Also there was a coating inside
3 the mouth and it had a bad after taste.
4 Q. Did you, yourself, work some on the flavor problems
5 with the product?
6 A. Yes.
7 Q. What was the nature of your work?
8 A. I had a major area of responsibility in terms of
9 making sure whatever ingredients ended up being put in the
10 product were acceptable. So the flavor, there is a large
11 department at Philip Morris of flavor chemists, whose sole
12 job in life is to try to make sure that the products we
13 sell are acceptable to the consumer.
14 And so the flavorists were working day and
15 night for, I guess, almost two years trying to figure out
16 how to correct this problem. And they would come up with
17 suggestions and they would basically have to go through me
18 to make sure that I was comfortable with some of the
19 preliminary adjustments they were trying to make.
20 Q. Were the flavor problems ever solved?
21 A. No.
22 Q. What ended up happening to the Next product?
23 A. It was pulled from the market some time in 1992.
24 Q. How much money did Philip Morris spend on development
25 of the Next product?

3662
1 A. 300 million dollars.
2 Q. Did the commercial plant that you described was
3 opened, what happened to that commercial plant?
4 A. It's still there. It has been mothballed.
5 Q. Is it used for anything?
6 A. No.
7 Q. Dr. Carchman, could Philip Morris have used super
8 critical extraction to remove nicotine from the cigarettes
9 earlier than the 1980s?
10 A. I don't believe so.
11 Q. Why not?
12 A. General Foods, in terms of their ability to remove
13 caffeine had actually tried many of the same things we had

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

tried over the years, and they had ended up using either water or an organic solvent called methylene chloride. It worked very, very well.

There was a big public relations problem with methylene chloride and basically General Foods was compelled to abandon that process and create a new process, and they came up with super critical carbon dioxide extraction.

Q. In the late 70s, early 80s?

A. That's right.

Q. Has any other cigarette company in the world been able to use super critical extraction to remove nicotine

3663

from tobacco?

A. Not that I'm aware of.

Q. Has any other cigarette company in the world succeeded in removing 97 percent of the nicotine from tobacco?

A. No.

Q. Okay. Doctor, I want to go back to our chart, and we are now to the last portion of the chart where you make reference to non-conventional cigarettes and the Accord.

When you talk about a non-conventional cigarette, we ought to start with conventional cigarettes.

What do you mean by conventional cigarettes?

A. It's a cigarette that has tobacco wrapped in paper that you burn.

Q. What do you mean by a non-conventional cigarettes?

A. It's a cigarette that's wrapped in paper that you don't burn.

Q. Why is it that you wouldn't want to burn the tobacco?

A. It had been suggested almost 40 years ago by one of the former heads of R and D that if we could somehow control the combustion process, the temperature at which the tobacco seize, that we could have an effect on the smoke constituents coming out the chemicals that the public health community has been expressing a concern about all this time. The question was: How do you

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

understand that

3664

combustion process and how do you control it?
So that was the concept.
Q. Can you generalize for the jury about where most of the compounds or at least some of the prominent compounds that the public health community has expressed concerns about are formed at high temperatures; low temperatures; or where?
A. Generally speaking, they are formed at the high temperatures that you see in burning cigarettes.
Q. So what was the theory that Philip Morris was pursuing in working with a cigarette that heated rather than actually burned?
A. Could you heat a cigarette in a controllable, reproducible fashion to a temperature below which you would not see most of the bad compounds that people are concerned about. And the question was what kind of technology was available? What kind of technology needed to be developed to get you there?
Q. Was there a level, a temperature level that you were attempting to achieve to accomplish your goals?
A. Yes.
Q. What was that temperature level?
A. We were going to try to control the telephone which the tobacco would seize at 500 degrees or less.
Q. Sir, have you put together, or has a chart been put

3665

together under your supervision that lays out the time line for the development of a non-conventional cigarette at Philip Morris?
A. Yes.
Q. And is that chart accurately set forth some of the prototypes and some of the dates that were part of this development process?
A. Yes.
MR. LOMBARDI: Your Honor, I would put that chart up now.
Q. Okay. Doctor, the chart line for the non-conventional cigarettes, if you look at that left hand

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

13 part of the screen, it says it has a project in 1976.
14 Do you see that?
15 A. Yes sir.
16 Q. Was that first time any work had been done with
17 non-conventional cigarettes at Philip Morris?
18 A. No.
19 Q. When was the first work done?
20 A. When Dr. Wakeham sort of laid out his idea of sort of
21 a direction to go here. One of the problems was it was on
22 the one hand easy to say we need to control combustion but
23 there were no techniques available for actually measuring
24 the combustion process in real time, or any tools to
25 actually measure what was coming out or try to understand

3666
1 what parts of the tobacco in the cigarette could be
2 responsible for some of the things we were worried about.
3 So a lot of that developmental foundation work
4 was done in the 60s.
5 Q. Okay. Now the first thing on the chart was in 1976
6 and it says Delta. What's Delta refer to?
7 A. There is a family that we called the Greeks, because
8 they had Greek names, Deta, Sigma, Beta. So the Delta was
9 one such concept development.
10 Q. It was a project?
11 A. Yes.
12 Q. And so in 1976 it says Delta.
13 What was done in 1976 in this Delta project?
14 A. Basically, you have the cigarette has a filter, it
15 has tobacco it has a chamber, an open chamber, and it has a
16 heat source, in this case it's a charcoal, like a little
17 briquette, charcoal briquette in the front of this
18 prototype.
19 Q. And what was the idea behind this design?
20 A. That you would like the charcoal briquette. It would
21 get hot; the smoker would inhale air; the air would be
22 heated by the charcoal, the warm air would, and sweep
23 across this tobacco bed and transfer to the smoker the
24 tobacco flavor. So you would get warm air, you wouldn't
25 burn this tobacco, you would get some tobacco

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

taste in your

3667

mouth.
Q. Was Philip Morris able to develop a commercial
product from this Delta project?
A. No.
Q. Why not?
A. For at least two reasons.
One, is strictly technical. They couldn't make
this in such a way that it would perform consistently and
uniformly.
And secondly, there is an issue with carbon
monoxide. When you use a charcoal heat source, carbon
monoxide is going to be a problem.
So from our perspective we couldn't make it and
we had a carbon monoxide issue on this.
Q. How long did the Philip Morris work on the Delta
project?
A. As you can see, it sort of runs along until the late
70s.
Q. Sir, I should identify the Exhibit Number here. This
is Demonstrative Exhibit 6645, is that correct?
A. Yes.
Q. The next work on non-conventional cigarettes that
shows up on the chart is in 1982.
What happened then?
A. Again, not wanting to put all its eggs in one basket,

3668

in terms of trying to control the temperature at which the
tobacco saw an alternative pathway was to provide heat via
an electrical device to the tobacco. So these are just
representations of two approaches, two concept approaches,
that R and D took in moving down this particular pathway.
Q. Why electrical heat?
A. With electrical heat you have at least conceptually
had the possibility of providing to the tobacco a fixed
amount of energy over a very fixed amount of time. So you
could control the quantity of the energy, and therefore the
amount of heat and you could control at the time.
Q. Now on the chart, would you tell the jury what the

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

top prototype is there? What is that sitting in the tobacco?
A. Flash bulbs.
Q. Why is it that Philip Morris put a flash bulb in the tobacco?
A. Well, we were relatively limited at that time in terms of what we felt could be available for concept development. And all this was -- I mean, I don't believe anybody really had any serious notion that this would be commercialized little cigarettes with flash bulbs in there? But this was a way of providing a controlled amount of energy to the tobacco bed. It was just part of the concept.

3669

Q. Now the prototype under the flash bulb looks like it has some kind of coil in it. What was the idea there?
A. Again, this is an electrical wire providing -- it's a heating coil so you can control the amount of electricity, the amount of heat and the amount of time, and therefore theoretically control the combustion process.
Q. What was the next significant development in Philip Morris's work with non-conventional cigarettes?
A. In 1987, this Delta 2 prototype.
Q. And what caused Philip Morris to start working with the Delta concept again?
A. In 1987 R.J. Reynolds Tobacco Company introduces a non-conventional product called Premier.
Q. And why did that prompt action at Philip Morris?
A. Well, this is a very competitive business and this was one aspect of our competitive response to that product.
Q. What was the difference between the Delta 2 prototype and the Delta prototype?
A. We were trying to improve upon the taste, what we call the subjectives of this product. So the main differences have to do with the predictive nature of the component and where they are in here. And now you have more tobacco in this particular product, you have a heat

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

source that is still a charcoal heat source.
Q. Did Delta 2 work?

3670

A. Oh, you could smoke it but you couldn't make it so it would smoke the same way every time you made it.
Q. Did Delta 2 result in a commercializable product?
A. No.
Q. What was the next development?
A. We then tried to directly attack the carbon monoxide issue from the charcoal heat source, and so we used another heat source.
Q. And what was that heat source?
A. Iron nitrite.
Q. Did that solve the problems?
A. That took care of the carbon monoxide problem.
Q. Did it result in a commercializable product?
A. It resulted in even a more complex product that we even had more difficulty in trying to fabricate. And in fact, for some of the biological tests we had some scientists having to hand make a million of these to use in our biological tests.
Q. Did you personally work on Delta 2 cigarette?
A. Yes.
Q. What was your role?
A. I was involved in terms of being comfortable with the components they were considering for use, and with the biological evaluation of these prototypes.
Q. What was the next development in Philip Morris's work

3671

with non-conventional cigarettes?
A. That's really, in 1988 which is the evolution of these prototypes here. And that's the Beta concept or Accord product.
Q. What is the Beta concept?
A. The Beta concept is basically taking a cigarette and putting it into an electric heater, and by using this electric heater, controlling the temperature and the time that the tobacco seize. And then the smoker would inhale through that cigarette.
Q. Now does this relate back to the idea of heating but not burning?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

A. Yes.
Q. And the Beta concept, did it call for heating but not burning?
A. Yes.
Q. Did the Beta concept ultimately result in a commercial product?
A. Yes.
Q. Okay. Let's skip to the end of the story here for a second, doctor.
Do you have Exhibit IWP 7128 which is -- what is that?
A. This is the heater. It's a battery operated device.
Q. What is that product called, so we have a name for



it?
A. Accord.
Q. And is that the product that resulted from the Beta concept?
A. Yes.
Q. Would you describe for the jury how the Accord is used?
A. This is a cigarette, it's a short cigarette compared to most of the cigarettes that are available. It has a filter, it has paper, and it has tobacco in it.
This is the heater, and it has a special battery, and it has a little window that tells you where the battery is, in terms of its charge. And it tells you how many puffs you have left on the product.
So you would insert this little cigarette in here, and then puff, puff on it.
Q. Okay. Does the cigarette burn inside that device?
A. No, sir.
Q. What happens to the cigarette inside that device?
A. There are special metal blades, eight sets of metal blades in this heater. And when the smoker draws, there is a puff activation micro circuitry in here that basically says when you draw on this, the energy goes very quickly from the battery to one set of those blades and touches this and heats this tobacco to about 500 degrees. It heats



http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

for two seconds, and then it goes off.
Q. Is there any ash created with the Accord cigarette?
A. No.
Q. Is there any of the smoke that you see coming off a cigarette that is put in an ashtray?
A. No side-stream smoke.
Q. Does the tobacco in the Accord get burned at all?
A. No, there is no self-sustained combustion.
Q. Can I can you see what I have here?
A. Barely but --
Q. What is that, that I've just put up on the Elmo?
A. I have this little short cigarette that has been puffed at least twice from the direction I am looking at.
Q. Okay. And what are those marks on the side of the cigarette?
A. Those are char marks where the metal blade touches for the two seconds that that blade is heated. That's the result.
Q. And is this a finished Accord cigarette?
A. If it's been puffed on eight times, that's it.
Q. And that's what it looks like when it's done?
A. Yes.
Q. One other thing about the Accord.
If you were to take one puff now, would the tobacco burn down and you not be able to take another puff



if you didn't get back to it quickly enough?
A. That's what I'm try to explain. It was not self sustaining. You can take a puff and put it in your pocket or your purse, or whatever.
Q. And pick it up a month later?
A. Well, if you wanted to, I guess.
Q. All right. Now, have you supervised the production of a chart that shows some of the components, that shows the technology that goes into the Accord cigarette?
A. Yes.
Q. Okay. Now, this is a side view of the Accord, sir?
A. Yes.
Q. And my question to you is: Generally, how much of this technology was in existence before the work that was done on Accord at Philip Morris in the 1990's?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

Let's start with the battery. Was that in existence before Philip Morris started its work on this project?
A. This was a special prism battery that did not exists. It was in a joint venture between Philip Morris and Sanyo.
Q. What's unique about the battery?
A. Several things.
The first one is the size of it, in terms of what it's does do. It is a high capacity and has a quick delivery of a charge from the battery to the product.

3675
Q. There is a micro chip, it says in this Accord, is that right?
A. Yes.
Q. Are you aware of any smoking device prior to the 1990's that had a micro chip?
A. No.
Q. What is the function of micro chip in this device?
A. This is programmed the same way your calculator or cellular phone is programmed. This is puff activated and basically it makes sure that the energy delivered from the battery to the blades is precisely what it is supposed to be for the precise period of time it's designed for.
Q. There is an arrow there too. The blades, were those blades in existence prior to the time that Philip Morris did this work on the Accord project?
A. They did not exist.
Q. And what was new about the blades?
A. When Philip Morris looked at this one of the first things it did was had its material scientist and outside consultants look at the metal alloys that were available? There were over 35 hundred different alloys that could have been used in this particular product.
Our internal scientists and outside consultants said, sorry, none of the alloys that were commercially available would be satisfactory for this product.

3676
Q. What did Philip Morris do then?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. In a joint venture with Oakridge Laboratories, a U.S. Government sponsored laboratory in Tennessee, it developed a totally brand new alloy, an alloy that did not exists up to that time.
Q. Philip Morris invented a metal?
A. Yes.
Q. And the infrared sensor, has that ever been used on a smoking device before the 1990s?
A. No.
Q. What was the purpose of the infrared sensor?
A. Part of the purpose was this heater will only accept this cigarette; you can't put any other kind of cigarette in here. So it basically -- it's a wakeup call for the rest of the system. The system is properly prepared for activation once that system is in place.
Q. Has Philip Morris obtained any patents on the technology that's used in the Accord cigarette?
A. Currently we have 48 patents on this product.
Q. Now, did Philip Morris test the smoke that came off of the Accord cigarette to see if the theory that heating, not burning, tobacco was accurate?
A. Yes.
Q. Okay. And were tests done with the Beta prototype?
A. Yes.

3677

Q. And when were those tests done?
A. They have been done over a variety of a number of years since I've been there, with a variety of different prototypes.
Q. Were you involved with that testing?
A. Yes.
Q. And have you compiled a chart that summarizes some of the results of that testing?
A. Yes.
Q. Is that the chart?
A. Yes.
Q. Okay. Along the left hand side are the names of some of the compounds, is that right?
A. Yes.
Q. How did you select those compounds to go on this chart?
A. These are the kinds of compounds that scientists and public health community individuals have raised

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

concerns
about over the years with regard to materials and smoke.
Q. So for instance, benzopyrene is up there at the top?
A. Yes.
Q. And there is non-volatile nitrosamines. Are those compounds that the public health community has expressed concern about?
A. Yes.

3678

Q. And benzine, for instance?
A. Yes.
Q. And down at the bottom carbon monoxide?
A. Yes.
Q. What does this chart generally show what have you put it together to show?
A. What this represents -- and this was presented last year at a Society of Toxicology meeting in Seattle.
Q. Is that a public meeting?
A. Yes.
Q. Okay.
A. To thousands of toxicologists. This was in Seattle.
And what this does is, it compares a conventional cigarette with this heated product. So the numbers you are looking at here, where it says 96 percent reduction, this is compared to a conventional product.
Q. So what does that mean? How much benzopyrene comes out of the Accord smoke as compared to what comes out of a regular cigarette?
A. You have 96 percent less benzopyrene.
Q. And are their similar results for the other compounds on up there on that list?
A. Yes.
Q. Now, is this the kind of results Philip Morris was hoping for when it began work on an electrically heated

3679

cigarette?
A. Yes.
Q. Did you do other kinds of testing with the smoke from the Beta prototype?
A. Yes.
Q. What type of testing did you do?
A. We did a variety of biological tests, looking at different kinds of biological activities.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. And when you talk about by the way is biological activity are you using a code word there?
A. No.
Q. What does biological active refer to?
A. It's an unbrella term that basically captures any kind of biological tests that have a different kind of import.
Q. Back when you were at the Medical College of Virginia or the National Institutes of Health, did you ever have occasion to use the terms biological activity?
A. Yes.
Q. Did you do test for the biological activity for the smoke?
A. Yes.
Q. And what generally were the results of those tests?
A. Those results tended to show that for the different kinds of biological tests that we did, there was a

3680

reduction in every single one of the activities that we looked at compared to a conventional product.
Q. And have you supervised the preparation of a chart that shows those results?
A. Yes.
Q. Okay. Please describe to the jury what is depicted on this chart?
A. First of all, this is extracted from part of what was presented in Seattle at the toxicology meeting. And what we have here are three different kinds of biological tests measuring three different kinds of biological activities. And what you have here are the bacterial mutagenicity. This is an in vitro test tube test and we are looking for the mutagenetic activity of what's in the smoke. And it's felt that this activity may somehow be related to cancer.
And what you see here is compared to the conventional cigarette. There is a 97 percent reduction in mutagenetic activity.
Q. Is that a good thing?
A. Yes.
Q. What's the next test there?
A. This is another in vitro test, test tube test. We

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

call it cytotoxicity. It looks at mammalian cells and looks at the activity in the cancer smoke that kills or damages the cells.

3681

Q. And what is the result of that test?
A. We see about an 80 percent reduction in the cytotoxicity.
Q. Is that moving in the right direction?
A. Yes.
Q. What is the next tests?
A. Here this is an in vivo test. We are using live animals, rats here. And these rats are exposed to inhalation from tobacco smoke from conventional cigarettes and this non-conventional product, six hours a day, seven days a week, for 90 days.
And what you have here is, as described here, is the irritancy, and you can see the non-conventional cigarette reduces the irritancy of the smoke by about 60 percent.
Q. Is that a step in the right direction?
A. Yes.
Q. As a scientist who has worked in toxicology over the years, are these significant changes in biological activity?
A. Yes.
Q. Was this information about the Beta prototype made public?
A. It was presented at the toxicology meeting in Seattle. A presentation was made to the US Food and Drug

3682

Administration, and I presented this to Health Canada last year.
Q. And Health Canada, was that Canadian Government Commission?
A. Yes. And that's going to be published some time this year.
Q. How much money has Philip Morris invested in the Accord product?
A. So far, because this is really not the end, there is still a fair amount of development work going on. I think we have put 200 million dollars in this so far.
Q. Doctor, to your knowledge, sir, has there ever been a

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

smoking device like the Accord?
A. No.
Q. Could the Accord product have been developed any earlier than the 1990s?
A. I don't believe so.
Q. Why not?
A. Well, I mean, you have had micro chips around for a while, but prior to that you had vacuum tubes and transistors, it's not going to work. The battery technology, as I said, we basically worked with Sanyo, one of the world's premier battery developers, who developed this new prism battery. We talked about the alloy blades in this product. That alloy did not exist and the material

3683

science technology and knowledge didn't exist to do that.
Q. As of the present time, Dr. Carchman, is there anything else Philip Morris could have done to make a safer cigarette, beyond what they have done with the Accord?
A. Not that I'm aware.
Q. And does the Accord represent the end of the road in terms of Philip Morris's work to develop a safer cigarette?
A. No. There are additional prototypes going on this. This is in test market now, we are getting feedback from the consumers, and we are making a series of adjustments. But no, this is not the end of the road.
Q. Okay. I'm going to change the subject on you from safer cigarettes to another area that you said you were involved in at Philip Morris. And that was biological research.
Is that right?
A. Yes.
THE COURT: Is this a change? I was going to give the jurors about five minutes.
MR. LOMBARDI: Yes.
THE COURT: This is going to be short break, so at a minute or two after 4:00 be back there. We'll go until after five tonight, so leave the pads face down and all the other admonitions I gave earlier continue to apply.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

3684

(Brief Recess.)

THE COURT: If the jury will be seated.

BY MR. LOMBARDI:

Q. Dr. Carchman, one last thing about the Accord I forgot to ask you.

Is it being sold today?

A. It is in limited market in Richmond, Virginia and it is being sold in Japan.

Q. Does Philip Morris have plans to make it available nationwide at some point?

A. Yes.

Q. What was your responsibility for biological research at Philip Morris?

A. When I came to the company in 1989, and that was my principle area of responsibility, especially as it related to product testing.

Q. And when you came to Philip Morris in 1989, did you do anything to familiarize yourself as to what had been done at Philip Morris in earlier years?

A. Actually I had a little head start; several years before I was a consultant to the company with regard to ingredients. So I had at that time developed some sense of what they did. And in 1989 I spent most of that year familiarizing myself with that process in more detail.

Q. What do you mean when you talk about biological

3685

research?

A. Actually, it starts with trying to understand what kinds of tests are available to evaluate a product such as a cigarette. And it's been examined for several decades and some people think they have some sense of what needs to be done. Philip Morris had some sense of what they felt was relevant here.

Q. What is the type of biological research that has been performed by Philip Morris historically?

A. They had looked over several decades at test tube types of evaluations.

Q. What's the scientific word for that?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

13 A. In vitro studies. And they have done either directly
14 or indirectly in vivo, or animal studies by inhalation, or
15 other routes of exposure.
16 Q. In vivo refers to?
17 A. Intact, live animals.
18 Q. Such as an inhalation study?
19 A. Yes.
20 Q. And were those types of studies done in the periods
21 of time before you got to Philip Morris?
22 A. Yes.
23 Q. And were these in vitro tests done before you got to
24 Philip Morris?
25 A. Yes.

3686
1 Q. In your review of the work that had been done at
2 Philip Morris, did you see reports in the files of the
3 company relating to the research that had been done?
4 A. Yes.
5 Q. Are you able to see that document from there?
6 A. Not really, but --
7 Q. Okay. And I don't think -- thank you.
8 That's the introduction to the document. And
9 were you able to see who this document was prepared by?
10 A. Bob Carpenter, I think.
11 Q. And who's Bob Carpenter?
12 A. Bob Carpenter was a scientist in Research and
13 Development at Philip Morris.
14 Q. And when was this document prepared?
15 A. 1967, 19 -- I think in that time frame.
16 Q. Okay. And what is the kind of biological research
17 that's reflected by this document?
18 A. This provides for this period of time the kind of
19 research activities that Philip Morris was supporting in
20 these biological tests. And I think he's referring to in
21 vivo or live tests in the first paragraph.
22 Q. And what kind of animals was he working with?
23 A. He describes mice.
24 MR. STRITMATTER: Object to the form of the
25 question, your Honor. That's an improper question, given

3687
1 the content of the document. This was outside research.
2 MR. LOMBARDI: I'll rephrase it.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. What type of animals was being worked with in this research?
A. Mice, guinea pigs, cats, and monkeys.
Q. And what was the type of study that was done with those animals?
A. Some of them were inhalation, inhalation studies; and some related to what are called -- they are variants of this mouse skin painting, but it's applying either cigarette smoke or cigarette smoke condensate to a number of different kinds of animals.
Q. Let me show you another one.
Okay. We don't have that one blown up. If you can't read it, it says: Toward a cigarette with lower biological activity, model studies a cooperative research program, American Health Association and Philip Morris, USA. January 16, 1978.
Have you seen that?
A. Yes.
Q. It's a cooperative research report.
What is the American Health Foundation?
A. The American Health Foundation is a foundation Professor Wynder founded after he left Sloan Kettering. Professor Wynder was an author on a peer review article



published in JAMA, Journal of the American Medical Association, on smoking and lung cancer.
Q. Was professor Wynder working for the tobacco industry?
A. No.
Q. What type of experiments were done as reflected in this report?
A. They were going to look at a variety of animal exposures by inhalation and by skin painting, at a number of cigarette prototypes or design changes? And again assessing a variety of different kinds of biological activities.
Q. And were they working with animals again?
A. Yes.
Q. What type of animals?
A. They were working with guinea pigs, mice, for example.
Q. Okay. Let me show you one more example.
And are you able to read that, doctor?

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

I'll
read it to you. Chronic 43 week, smoking study -- I can't
pronounce --
A. Synamolgis --
Q. Synamolgis Monkey, final report.
Do you see that?
A. Yes.

3689
Q. And what kind of testing is reflected in that report?
A. This is a chronic inhalation study in these kinds of
monkeys with tobacco smoke.
Q. Is that again typical of biological research that was
performed by Philip Morris in the 60s and 70s?
A. Yes.
Q. Now these tests were done by outside laboratories,
not actually in-house at Philip Morris, is that correct?
A. This is by Hasselton Labs in northern Virginia.
Q. Are these all these outside labs we have seen in the
United States?
A. Yes.
Q. And what, what is the reason for having the research
performed at an outside lab rather than in-house at Philip
Morris?
A. Sometimes the technical expertise and the resources
for doing these kinds of studies only exist in very special
places. To do a chronic monkey study really can't be done
but in a few places in the free world, and Hasselton was
such a place.
Q. Is it unusual for a company to go to an outside
laboratory to conduct research?
A. I would say it's more than the common practice than
unusual.
Q. Why is it a common practice?

3690
A. Well, there were capacity issues. Even if you do
have a facility, it has limited capacity. And then there
is the point that the expertise and the kinds of technology
that's available are oftentimes located in very, in very
few places, very special places. So you have to go outside
if you want certain kinds of work done.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. Okay. And doctor, the report, the Hasselton report
we have up there is Exhibit IWP 1608, is that correct?
A. Yes.
Q. Down on the bottom right.
The Carpenter report is Exhibit AIW 2191.
That would be the American Health Foundation
report is AIW 2191 and the Carpenter report is GK 10049,
is that correct?
A. Yes.
Q. Now, did Philip Morris also do biological research at
INBIFO both before the time you got to Philip Morris and at
the time you were at Philip Morris?
A. Yes.
Q. What was your position with respect to INBIFO when
you worked at Philip Morris?
A. That was part of my first assignment was to both
familiarize myself with INBIFO and then very quickly become
the gatekeeper, if you will, with respect to the kind of
work INBIFO was doing and Richmond viewed them to do.

3691
Q. INBIFO is the lab that we have heard about, that was
headquartered in Germany?
A. Yes.
Q. And INBIFO is acronym meaning Institute of Biological
Research?
A. Yes.
Q. Was the relationship between INBIFO and Philip Morris
a secret at the time you arrived at the company?
A. No.
Q. Why does Philip Morris use INBIFO today?
A. It is a world class facility in the area of
inhalation toxicology. This is a cigarette company dealing
with product development and smoking and health issues.
Q. What is the state of the a facilities at INBIFO?
A. In approximately 35 years that I've been involved in
research, it's probably one of the best laboratories I've
ever seen.
Q. What are the qualifications of the scientist at
INBIFO?
A. It goes along with the facilities we have,
physicians, veterinarians, Ph.D.s, chemists,

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

biologists,
molecular biologists, engineers, about 150 people.
Q. In your experience as a scientist, have you heard the
term laboratory certification?
A. Yes.

3692
Q. What does that mean?
A. There are different organizations, both local,
national, and international, that will assess a facility
and then try to certify it. This is very important if you
are doing any work in which a government regulatory body is
involved, like the Food and Drug Administration.
Q. And what types of organization goes provide
certifications for laboratories?
A. The USFDA does, but there are some international
organizations that do the same. The OECD over in Europe is
recognized by, for instance, the FDA as being an
organization whose certification they will accept.
Q. Does INBIFO have any laboratory certifications?
A. It has such certification, and in fact has been
visited by the FDA, I say in the early 80's and received
certification for the study it was doing then. Though that
was not a cigarette study, they did certify the facility.
Q. Do certification procedures, or the certification
procedures that apply to INBIFO, require certain steps be
taken with respect to preparation of documents and
retention of documents?
A. Yes.
Q. What are those requirements?
A. These documents, in terms of its preparation, its
storage, whether it's electronic information or paper

3693
information, is handled by a special group of individuals.
Usually they are in the quality control, quality assurance
group, which is a sort of an independent organization, and
it's kept in a special archival facility that is secure in
terms of theft, fire, bugs. It is a very, very secure
facility, highly controlled facility to make sure nothing
disappears.

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: http://industrydocuments.ucsf.edu/docs/hyxd0001

Q. Okay. Based on your experience as the gatekeeper for INBIFO, and your review of all the INBIFO files when you got to Philip Morris, do you have knowledge of whether INBIFO has maintained all its scientific records going back to the time that Philip Morris purchased the lab?
A. Yes.
Q. And what's your knowledge on that?
A. Actually, they kept documentation even before Philip Morris bought the lab and Philip Morris had done some contract work there. You can find those documents still in the INBIFO files, and this precedes certification. I think it's an inherent part of the German scientist mentality to do so.
Q. While you were employed by Philip Morris in Richmond, did you receive documents from INBIFO at your Richmond office?
A. Yes.
Q. Did other scientists?

3694

A. Some.
Q. Why only some?
A. If it was related to their job they received it, if it wasn't related to their job, they didn't.
Q. Were INBIFO documents maintained in files in Richmond?
A. Some of them, yes.
Q. Okay. And how do you know that?
A. I read them.
Q. During your time at Philip Morris, were you aware of any efforts to destroy documents from INBIFO rather than produce them in the course of litigation?
A. No.
Q. Are you aware of INBIFO documents being produced in the course of litigation?
A. Yes.
Q. How did you become aware of that?
A. Well, when I started to work with the company in '89 and started to read the INBIFO reports, there were some numbers on the bottom of the reports. I had no idea what they were. I later became aware that these were stamped numbers that were collected in some litigation.
Q. Are you aware that the documents from INBIFO had been

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

made available to plaintiffs in this litigation?
A. Yes.

3695
Q. Now, you said you reviewed all the research that had been done at INBIFO at the time you came to Philip Morris, is that right?
A. Yes.
Q. Did the scientist at INBIFO make any discoveries that were not known to scientists in the outside world concerning smoking and health issues?
A. No.
Q. Sir, we have had a little bit of testing -- excuse me, a little bit of testimony about something called whole product testing. Does Philip Morris do whole product testing?
A. The inhalation studies are basically comparing a modified product with a whole cigarette.
Q. What do you mean by a whole product testing?
A. If we are talking about an inhalation study, we would take a cigarette, and the cigarette that we use is a reference cigarette, a Kentucky reference cigarette used by the University of Kentucky. There are several kinds, depending on what questions you are asking. And we would use that as a control, and take an ingredient, for example, put it on another reference cigarette at several different levels and smoke them and look at the chemistry and the biology of comparing those two.
Q. You made reference to a Kentucky referenced

3696
cigarette. What is that?
A. It's a cigarette that's been around for quite a while, it's a cigarette that has tobacco, it's wrapped in paper, it's an American blended cigarette. It has the same blended composition as the cigarettes in the US market. It has some other things added to it, as you do in the commercial market in the United States. And you can get them for different tar deliveries.
So in most of the studies we use what's called the Kentucky 1R4F. The F means it's a filtered

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: http://www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

cigarette.
The R, 1R4 means it delivers about 11 grams of tar.
You can get reference cigarettes that give you more and less.
Q. Who makes these reference cigarettes?
A. University of Kentucky.
Q. Why use a reference cigarette rather than, say, a Marlboro that you can purchase off the shelf?
A. These are scientific investigations in which the data are accumulating are important to us from a scientific perspective, and those perspectives would include sometime in the future somebody might want to look at this and either repeat the studies go or go further with them. So you have a sort of a standard material to look at; that's one.
The second is that this reference cigarette has

3697

been in use both by the government and by outside scientists for a number of years; and therefore, there is a large historical database of information to compare and go back and look at. It's very, very important from a scientific perspective to approach the problem this way.
Q. Are these reference cigarettes reflective of how commercial cigarettes are smoked?
A. They are made, they are made the same way, basically, with minor variations.
Q. Are there entities outside Philip Morris and outside the tobacco industry that use these reference cigarettes for testing?
A. Yes. And you can find their data in US Surgeon General's report, the reports the World Health Organization through the International Agency for Research on Cancer in Volume 38 of their tobacco smoking monograph has an enormous amount of data based on these reference cigarettes.
Q. How work from the National Institutes of Health?
A. It was really the TWG that really provided the foundation for the use of these as the goal

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

standard.
Q. Are reference cigarettes -- what -- how does a cigarette designer look at reference cigarettes?
A. It really depends on the question that you are asking.

3698

If we are talking about ingredients, then that's one conversation; if we are talking about another modification we could have another kind of conversation.
Q. Are reference cigarettes the cigarettes of choice for a cigarette designer?
A. If one wants to do a scientific evaluation, it's the only way to proceed.
Q. Let me move to another topic with you that has come up at this trial.
Polonium 210? There has been some testimony about some cancer theories involving polonium 210 and Philip Morris's work regarding polonium 210, what is polonium 210?
A. It's a radioactive element.
Q. Where is polonium 210 found?
A. Everywhere.
Q. Is there likely polonium 210 in this room?
A. I'm sure if we looked we could find it.
Q. How is it that polonium 210 comes to be in tobacco smoke?
A. Tobacco plants grow in the environment, and it's really -- the environment. Primarily because of nuclear fallout, things like Chernoble, that polonium 210 sort of drops from the sky onto lots of things, including tobacco.
It's in the ground, it's picked up by the tobacco plant as

3699

well.
Q. Dr. Carchman, during your time as a cancer researcher and at Philip Morris, did you become aware of theories about polonium 210 and the cause of lung cancer or other disease?
A. Yes.
Q. What was the gist of the theory?
A. That you would smoke the cigarette, the polonium 210

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

would be in the cigarette smoke, you would inhale it, the polonium 210 would be deposited in your lungs. It's a radioactive element, it emits a certain form of energy, that energy damages the DNA in the cells, and you get lung cancer.
Q. Was there a particular time period when that theory was popular?
A. In the mid-60's.
Q. What has happened to that theory -- strike the question.
What did Philip Morris do, if anything, to study polonium 210?
A. The first thing it did, this is a very low level radioactive material, so it's not like walking around with a geiger counter, as you would see in the movies. You wouldn't pick up polonium 210. So Philip Morris put together a low level radioactive facility for actually

3700

trying to measure polonium 210. That was the first thing Philip Morris did.
Q. And what else did Philip Morris do?
A. Then they tried a variety of procedures to remove polonium 210, and it was recommended at the time by a number of people that washing might be a way to wash the tobacco might be a way to do that.
Q. Take a minute, if you need to.
A. Go ahead. It's okay.
Q. Did washing the tobacco work?
A. No.
Q. Was Philip Morris able to remove all the polonium 210?
A. No.
Q. Now, what has happened since the 60s to this polonium 210 theory of causation of disease?
A. Two events. The original reports I think in '64 by Read and Hut and others that made this original suggestion.
In 1980 the subject called the Banbury Committee, which was a meeting held at Coal Spring Harbor in New England, of scientists working in the area. There was a publication that dealt with this. That

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

publication
23 based the question, the relevance, the
significance of the
24 cancer causation hypothesis notion associated
with
25 polonium 210. And in the following year, in 1981
in the

3701
1 US Surgeon General report "The Changing
Cigarette", the US
2 Surgeon General basically repeated what the
Banbury
3 scientists had said in terms of questioning the
strength
4 of this risk.
5 Q. And today, are you aware of any reputable
scientist
6 who subscribes to this polonium 210 theory of
causation?
7 A. It really hasn't resurfaced in the
scientific circles
8 since the early 80's.
9 Q. Last topic for you, Dr. Carchman. You said
that one
10 of your primary duties at Philip Morris had been
the
11 evaluation of cigarette ingredients, is that
right?
12 A. Yes.
13 Q. Let's start at the beginning. What is an
ingredient
14 in a cigarette?
15 A. For this discussion it's anything that you
add to the
16 tobacco in the manufacture of the cigarette.
17 Q. Have you heard the term "additive" being
used?
18 A. Yes. Yes, I have.
19 Q. Is an additive any different from an
ingredient?
20 A. Not in terms of this discussion.
21 Q. The jury has heard about constituents of
smoke.
22 There is a difference between additive on the one
hand and
23 ingredient on the other on the other hand?
24 A. Yes.
25 Q. What is the difference?

3702
1 A. An additive is what we put in, and
constituent is
2 what comes out when we smoke the cigarette.
3 Q. Do you know how long Philip Morris has used
4 ingredients from different ingredients in its
tobacco
5 products?
6 A. We can go back a hundred years.
7 Q. How long have people being using ingredients
in
8 tobacco products?
9 A. Probably all along.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. The fact that Philip Morris and other tobacco companies use ingredients, has that ever been a secret?
A. I don't believe so.
Q. What are some of the major purposes of ingredients?
A. One purpose and you could break them down into categories the way we talk about them, there is a class called humectants. These are things that add moisture to the tobacco.
When you have a tobacco leaf and trying to make a cigarette out of it, it would have a tendency of drying out, so you would end up with dust and you wouldn't have the kinds of things, it wouldn't stay the in cigarette.
So you have to apply a lot of moisturizers.
And examples of moisturizers would be water.
Water is the single -- the ingredient we use the most often, and it's an ingredient humectant or moisturizer,



glycerine or propylene glycol.
Q. And humectant is a moisturizer?
A. Yes.
Q. And if you didn't put a moisturizer in the tobacco, what would happen?
A. You would have mostly dust.
Q. What is another major purpose of ingredients?
A. Another are called processing aides. And here we are talking about taking the different kinds of tobaccos and doing something with them.
So, for example, the puff tobacco, the expanded tobacco that we talked about earlier where we used the diet process, what you called the dry ice process, that's a processing aide.
The way you make that tobacco is put in carbon dioxide under pressure, release the pressure, and the tobacco puffs up like puff wheats, puff rice. And the tobacco product is gone. So the processing aide is something that is used in the making of the tobacco, but usually not found in the finished product.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

Q. What's another major purpose of ingredients?
A. One that anybody sees in a pack of mentholated cigarettes are the flavorants added in, spices. So mentholate would be one such material, or chocolates, licorice are other types.

3704

Q. If we would go and buy a cigarette off the shelf of a store today, approximately what would be the amount of tobacco in a cigarette as opposed to the amount of ingredients in a cigarette?
A. Just talking about the cigarette, what we call the cigarette rod, about 88 percent of that is tobacco, 12 percent are things like humectants, the flavors.
Q. Okay.
A. And most, most of those are humectants and sugar. The actual flavors, except for menthol, are found in absolutely minuscule amounts in a commercial product.
Q. And you keep saying humectants. Those are moisturizers?
A. Yes.
Q. Have we prepared a chart that reflects this distribution of tobacco versus ingredients?
A. Yes.
Q. Okay, is that the chart?
A. Yes.
Q. Can you describe to the jury what's depicted on that chart?
A. So this would be within the cigarette rod, you have the tobacco. So in this, in this rod, 87 and a half percent would be tobacco, about 4.9 percent water, 3 percent sugars, glycerine, glycerol is a humectant.

3705

Propylene glycol a is another humectant. And if this were a mentholated cigarette it would be 1.1 percent menthol. If it was a non-mentholated cigarette, you would have 1.1 percent more tobacco. For things like coca, licorice, and flavors, it's .15, .2, .3 percent; all these other materials would be folded into this small piece of this pie.
Q. So the single largest ingredient is water?
A. Outside of tobacco.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. Outside of tobacco?
A. Yes.
Q. Just to give the jury an idea of how much water you are talking about here. If it was a menthol cigarette it was of the 1.1 percent by weight. That how much menthol?
A. That's about 7 milligrams. And a milligram is a thousandths of a gram, and unfortunately I weigh a hundred kilograms, which is about 230 pounds. So it's (blowing) gone if it were sitting on this table.
Q. Okay. Now, based on your work at Philip Morris, evaluating ingredients, do you have any opinion as to whether the ingredients and the amounts used and in the manner used pose a health hazard to smokers?
A. I have an opinion, yes.
Q. Under the levels and conditions that Philip Morris uses these ingredients, do the ingredients pose a health

3706

hazard to smokers?
A. No, they don't.
Q. Let's talk about your basis for saying that.
At Philip Morris, is there a method of evaluating ingredients?
A. Yes.
Q. And could you, just in overview, form, describe that method, and then we'll put up a chart?
A. It has several different levels of approach, at a minimum 6. And the first level has to do with getting all the information that exist in a scientific world, in a regulatory world, or other sources on the material.
THE COURT: Let me just ask you to hold.
Would the attorneys approach once.
(The following discussion was conducted at the side bar between court and counsel, out of the hearing of the jurors, as follows:)
THE COURT: Let me just ask. Do you make a claim that the ingredients themselves, that the defendants wrongfully represented facts, in terms of the ingredients or is it just wrongful in the things --
MR. COUGHLIN: No, I think the claim, as far as

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

the ingredients just point to the testing, and that it was
part of the gentlemen's agreement. What they did with the
testing is not in the agreements.

3707

THE COURT: I understood that point. I don't
know we need to spend time on the ingredients. We have
spent an awful lot of time just going over things that
aren't in contention.
MR. LOMBARDI: Judge with the ingredients, this
is something that came up with Davis, its come up with
others.
THE COURT: We have had discussions about
ingredients that were added, but I don't know that
anything, I don't recall anything, anybody saying that it
was wrongful.
MR. LOMBARDI: Well, but if they didn't express
it, they clearly said it by implication.
THE COURT: I don't think so. I don't want to
spend a lot of time on this with this witness. We have
spent a lot of time with this witness going over stuff
that isn't relevant.
He's given testimony on some things that are
major contention, but we have spent an awful lot of time
on things far afield.
MR. LOMBARDI: Can I lead him through this
quickly?
THE COURT: Why don't you ask his general
opinion, and if they cross him on it you can come back.
Just ask him general opinion on ingredients added.

3708

In fact, I think he's just testified didn't
cause any disease. Why don't you leave it at that until
they cross on it and he claims it does, and you can
revisit.
MR. LOMBARDI: Since he started the 6 steps --
THE COURT: No, I think we are getting at the

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

end of the day. We have been at this for a long time.
MR. LOMBARDI: Okay.
(The following proceedings were conducted in open court.)
BY MR. LOMBARDI:
Q. Doctor, based on the internal work done at Philip Morris, do you have an opinion that the ingredients used in Philip Morris cigarettes are safe for their use?
A. Yes.
Q. Is there anything else, in your opinion, that Philip Morris could do to insure that the ingredients in cigarettes are safe?
A. Other than what we currently do?
Q. Other than what you currently do?
A. No.
MR. LOMBARDI: Thank you, your Honor.
THE COURT: Cross examination.

CROSS EXAMINATION

BY MR. STRITMATTER:

3709

Q. Good afternoon, ladies and gentlemen. Good afternoon Dr. Carchman?
A. Good afternoon.
Q. I'm looking at my notes that I wrote down, and I want to make sure I wrote this down correctly. Did I understand you to say that we have basically agreed that smoking causes cancer? That is not new.
A. What I said, in response to Mr. Lombardi's question, was that if one equates cause and risk, as many people do, including the public health community, if that's the basis for that consideration, this answer is yes.
Q. Do you equate cause and risk?
A. I equate cause and risk at two levels; it's not a simple yes and no answer.
At one level, when I have been asked does smoking cause lung cancer, my response has been possibly. And when asked why it's possibly, I then come back to the other pieces of the answers I gave to Mr. Lombardi that dealt with the scientific proof that nobody understands which constituent or constituents or the mechanism by which smoking causes any disease.
Q. It's not necessary to know what the mechanism is in

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

order to know whether or not there is causation though, is there?
A. From a public health perspective, you are absolutely

3710
right. From a scientific perspective I think you can't, because you can't step into that, into that question without being able to understand what's causing it and how it's causing it.
Q. Is biological plausibility the tests in fact of causation?
A. Absolutely not.
Q. Isn't that what the Surgeon General found was the test for determining causation?
A. Absolutely not.
Q. And so you are not saying something new here today when you say that basically we have agreed that smoking causes cancer. That's not new.
A. What I have said is, given the definition that one wants to use, one can make certain points. And one point is if you equate causation with increased risk at that level, then maybe we have agreed.
Q. When you retired as Vice President of Research and Development and Engineering there at Philip Morris, how many people were there holding comparable level positions to yours?
A. Vice Presidents in that organization?
Q. Yes, sir?
A. Maybe a half a dozen.
Q. And how many people were there that held positions

3711
above yours?
A. In Philip Morris USA, two.
Q. Who is your boss?
A. Dr. Jack Nelson.
Q. And was Dr. Kathy Ellis won of your bosses?
A. At one time she was.
Q. And when did that change?
A. In September of last year.
Q. What was your salary in 1998 as a scientist at Philip Morris?
A. I want to say about $180,000.
Q. And did you receive annual bonuses in addition to that salary?

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. I received a bonus in that year, yes.
Q. How much was that bonus?
A. Approximately $80,000.
Q. I'm sorry?
A. Approximately $80,000.
Q. And was that comparable to other bonuses that you have received?
A. Yes.
Q. Did you also receive stock options?
A. Not last year.
Q. How much do you own in stock options in Philip Morris stock that you have been provided as compensation?

3712

A. I have approximately 20,000 shares in options.
Q. Now, you do agree that smoking is a risk factor?
A. Yes.
Q. What is the risk factor for male smokers getting lung cancer as compared to non-smokers?
A. Where?
Q. In the United States?
A. Anywhere from 10 to 20.
Q. Would you agree that's a very high risk?
A. Yes, sir.
Q. Studies have shown that there is a lot more risk than just comparing a smoker to a non-smoker, hasn't there been?
A. I'm not sure I understand your question.
Q. Well, for instance, there have been studies that show that heavy smokers have a higher risk than light smokers; a dose response, isn't that true?
A. You mean by heavy smokers, the more they smoke?
Q. Yes?
A. Yes.
Q. So someone who smokes two packs of cigarettes a day has a higher risk than someone who's smoking one pack a day?
A. Possibly yes.
Q. Longer term smokers have a higher risk than short term smokers. And that's directly proportional to the time

3713

they have smoked?
A. Yes.
Q. Smokers who inhale have a higher risk than smokers who don't inhale, true?
A. True.
Q. Former smokers have a declining risk as compared with

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

current smokers, true?
A. In general, that's true.
Q. And the longer a person quits, the more the risk goes down in direct proportion to the length of time they have quit smoking. Isn't it that true?
A. After a certain period of time, yes.
Q. Now, would you agree that life expectancy of any smoker at any age is significantly shortened compared to non-smokers?
A. I have read numbers to take effect, but I have not evaluated those numbers. I have seen them reported, yes.
Q. Have you seen the Surgeon General's report that says a 30 year old two pack a day smokers has a life expectancy of 8 or the 9 years shorter than a non-smoker?
A. I believe I have read that.
Q. And mortality rates are higher for those who started smoking at younger ages than at later ages, isn't that true?
A. Yes.

3714

Q. And these same results have been found in many different populations, haven't they?
A. The same other observations in general for many different populations, yes.
Q. They have been found not only in this country but other countries?
A. Qualitatively speaking, yes.
Q. And they have been found in different aspects of our total population?
British physicians have been studied, and these risk have been found?
A. These risk have been found.
Q. And American veterans?
A. Yes.
Q. Would you agree that in fact every major scientific organization in the world has found that smoking causes cancer?
A. I'm not sure I understand what you mean. Major scientific organization has found?
Q. Yes, sir?
A. I'm not sure I understand your question.
Q. That they have made public pronouncements finding that smoking does cause cancer?

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

A. I would say there are selected scientific associations that have taken positions on smoking and

3715

health, yes.
Q. Are you aware of any major scientific organization that has not found that smoking causes cancer?
A. I can list several major scientific organizations that have been silent, have not taken a position on that question, yes.
Q. You worked with the National Cancer Institute?
A. Yes.
Q. And have they made a pronouncement and found that smoking causes cancer?
A. Yes.
Q. How many employees were there in the Research Department at Philip Morris when you were there?
A. Over 600.
Q. And you indicated that the assumption there, at least your assumption, and I want to explore this for a moment, is that smoking does cause diseases in your working hypothesis there, is that correct?
A. Yes.
Q. Was that also the hypothesis of all the scientists that worked there?
A. I couldn't possibly speak for all the scientists. I can only speak for those scientist that I had a personal knowledge of. And I would say the answer is probably yes.
Q. And did they also have a personal scientific belief

3716

that smoking caused cancer?
A. I don't know the answer to that question.
Q. Was any poll or study ever done to make that determination?
A. Not that I'm aware of.
Q. Has Philip Morris every told its customers that it's working hypothesis in its own research laboratories is that smoking does cause disease?
A. Not that I'm aware of.
Q. Would you agree that the relative risks for emphysema from smoking is also high?
A. It is elevated, yes.
Q. It's over 5?
A. Yes.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: http://www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. And you would consider that to be high?
A. Yes.
Q. Would you agree that the relative risk for other cancers is high, other than lung cancer?
A. Yes.
Q. Would you agree that the relative risk of chronic obstructive pulmonary disease from smoking is high?
A. Based on the Eppy studies, the association gives a risk number that is high, yes.
Q. And yet you are aware that Philip Morris and the entire industry, other than Liggett, has continued to claim

3717

there is a controversy as to whether or not smoking causes disease?
A. I've heard these arguments, in terms of the controversy. All I can say, based upon my interactions with the people at Philip Morris, there is a clear recognition that smoking is a risk factor for lung cancer and a variety of other diseases.
The controversy, if that's what you want to call it, and I can't speak for any other company, is the difference between the answer to the question I gave Mr. Lombardi about cause and risk and scientific proof.
And therein lies the major difference; the fact that there is a lack of scientific proof. If there was scientific proof then the position would be different.
Q. And do you think it is an appropriate for the obligation of Philip Morris to its own consumers to maintain that controversy and that argument?
A. I'm sorry, you were using the word controversy and maintaining it.
I believe in at least 1997 there was a letter transmitted to Senator Hatch in which I believe it was Mr. Vivo, the Chairman of Philip Morris basically said, we'll not, as a matter of course, dispute or undermine the public health messages at all. And we would primarily only talk about this in situations such as this where we

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3718

are trying to defend ourselves either in litigation or regulatory environment where the science supports the argument.

Q. And hasn't that in fact been the crux of Philip Morris's position all along over many years, that is they needed to do this in order to try to maintain a defense for litigation purposes?

A. You are asking the wrong person. I'm not a lawyer, I'm clearly involved in litigation here, I have no training, no background, and no real interest, to be frank with you.

So you are asking the wrong person the answer to that question.

Q. And you did not see the documents to that effect from Philip Morris when you did the research?

A. Which documents are you referring to.

Q. Indicating that the reason for taking such a position was to maybe maintain a defense for litigation purposes?

A. I have seen documents as a result of litigation that speak to or purport to speak to those points, yes.

Q. I mean, before any litigation, that they needed to do this as a defensive posture before any litigation?

A. I'm sorry, I'm not being clear. What I'm saying, I was not aware of those documents until I got involved in litigation.

3719

Q. I'm sorry, I misunderstood you.

Let me direct your attention to some internal documents that have been found at Philip Morris.

Would you show us Exhibit 114, please.

This is Exhibit 114. It's a July 20th, 1956 document to, among others, O. P. McComas. Do you know that he was the President of the company?

A. I did know that, yes.

Q. And referring to the highlighted language there it says, decreased carbon monoxide and nicotine are related to decreased harm to the circulatory system as a result of smoking.

Do you see that?

A. Yes.

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. Was this a finding that Philip Morris had back in
1956 about the dangers of carbon monoxide to those who
purchased and used their products?
A. This 40 something year old document I have not seen
outside of litigation, nor have I seen anything that would
suggest to me that scientifically Philip Morris knew this.
Q. You are not aware of what scientific work they did in
order to make this determination as stated here?
A. In 1956?
Q. Yes, sir.
A. No, sir.

3720

Q. This does indicate that they had that knowledge
internally, doesn't it?
A. Well, you are showing me one highlighted section of a
document, the sides of which -- I don't know, I've never
seen this document before outside of litigation. So it's
not, it wouldn't be fair for me to, I have no basis for
answering your question.
Q. You have looked at this document in conjunction with
litigation, haven't you?
A. Yes, I have.
Q. And it was suggested to you that this would be a
document that would be shown for today, isn't it?
A. Yes, I saw it within the last day or two.
Q. Let me refer you to Exhibit 213.
This is a September 22, 1959 document by Dr.
Wakeham. He was the research director?
A. In 1959 he was probably the Vice President of
Research and Development. He was the head of R and D.
Q. All right, sir. And he speaks of the title of the
document is "An Opinion on Cigarette Smoking and Cancer",
correct?
A. Yes.
Q. And referring to the highlighted language it says,
whether or not cigarette smoking is a cause of lung cancer
is a matter of definition.

3721

Now, is that what you are saying today also?
A. Absolutely not.

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Q. Then I misunderstood you before, because I thought you said it was a question of definition?
A. It's a question of perspective. If I'm a public health official, I don't need to necessarily cross every T and dot every I to take a position.
If you are a scientist, then you have a different, different position based on a different set of learnings and understandings and responsibilities.
Q. Aren't the scientists at Philip Morris concerned about the health of their customers?
A. Very much so.
Q. Let's refer to Exhibit 250. This is a report dated March 15, 1961 that was done by Arthur D. Little?
MR. LOMBARDI: Your Honor, excuse me. This is not a Philip Morris document. It's Arthur D. Little, and it relates to limits to be discussed previously.
MR. STRITMATTER: This is a document received from Philip Morris. It is in their records, your Honor.
THE COURT: Finding for counsel's representations to that effect, and you can check that out. If you find that out not to be true, you can bring it to our attention. But upon counsel's representation I'll allow questioning.

3722

BY MR. STRITMATTER:
Q. In reviewing the records of Philip Morris, did you come across this document?
A. I might have, but I believe I became aware of this in terms of recognizing this as in the course of litigation.
Q. The Arthur D. Little Company was a respected company, was it not?
A. Still is.
Q. And was in '61 and still is today?
A. Yes.
Q. They say there are biologically active materials present in cigarette tobacco, these are cancer causing, cancer promoting.
That was information that was given to Philip Morris as early as 1961 by Arthur D. Little, wasn't it?

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

A. This is publicly available information in 1961. I mean, it wasn't news to Arthur D. Little, nor was it news to Philip Morris.
Q. Did Philip Morris ever tell its customers that in fact there are biologically active materials present in cigarette tobacco, and these are cancer causing or cancer promoting?
A. I don't believe so.
Q. Do you know why they didn't do that?
A. Actually, I think I have some sense of what was going

3723

on, if I can try to answer your question. I mean, this is clearly almost 40 years before my time with the company, but I have given some thought to this, and I go back, at least in my mind, to 1954, and something called the frank statement, which Philip Morris was a participant or co-signee of.

And I look at that document from the perspective, and it's a two part document. In my mind, being on the left side of the document these folks basically say this is what we believe. And I believe, I think at the time what they said was probably true, in terms of the scientific information and understanding.

On the right side of the document they basically say, we are really not sure what's going on with our product, but we are going to set up some mechanism to fund and investigate this.

And that was, in part, a result of the two Eppy studies and some of the other Eppy studies.

You talked about the veterans. If you had these studies, the British Physician, the Wynder publications, and probably also stimulated in no small way by Professor Wynder's mouse skin painting study where he took a condensate from tobacco smoke and painted it on the back of mice and showed that condensate produced cancer on those mice and then talked about some of the things that

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

3724

might be in that condensate, that could be responsible for this.

So 1961, this information was out there, at least to me the frank statement speaks to some acknowledgement that there is a potential problem out there and we need to do something. But the kinds of things that are on here, was, was clearly not new.

In 1959 the American Cancer Society launched what, at the time, was the largest Eppy study of its time.

A million people.

Cancer study number 1, at that point they were starting in 1959, saying to themselves we need to look at this big time in the United States. So I don't see anything new here that wasn't publicly available at least in the scientific literature I'm aware of.

Q. We know what the industry did publicly with its frank statement did it put out a retraction or explanation of its frank statement when it learned this information?

A. You mean when the UK government started to make statements about risk of smoking; in '64 when the US Surgeon General came out and had that first report on smoking and health?

I think the answer is no. I think at that time it clearly became the purview of the health authorities around the world, including the US Surgeon General, and

3725

the United States was speaking loudly and clearly to the issues of smoking and health.

Q. Well, first my question was, when Philip Morris learned this, did they let their customers know, or let the public know, because you are suggesting they knew it before 1961. Did they do so?

A. What I'm suggesting was this was publicly available information before 1961.

Q. And when the Surgeon General came out in 1964 and said that smoking causes lung cancer in males, the industry

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

disputed that and created a controversy over the issues, didn't they?
A. Well, let's try and be specific in terms of what the Surgeon General specifically said, and what the underlying causality arguments that the Surgeon General used in that '64 document, because they spent a lot of time in the causality section talking about what causality meant.
And in the following year Bradford Hill published another article on causality. And when I looked in a most recent WHO book called Basic Epidemiology sponsored by the World Health Organization, I was somewhat surprised that was 1993, somewhat surprised that they were still raising some of the concerns about causality.
It comes down from 1964, the US Surgeon General's report to at least 1993 and probable today that

3726

it ends up being a value judgment a value judgment in terms of whether something is causal or not especially, as it relates to something as complicated as a smoking related disease if we are talking about an effective type agent and process it's a different story I here it's a Lorain lots more complicate the do so this controversy that you keep using and I've heard it before, I think one has to really look at what the US Surgeon General said and why they said it.
Q. When you say it was a value judgment, do you think in consideration of values that the tobacco industry and Philip Morris specifically, in weighing those values, should have been considering what the health risks were for its customers?
A. Actually the questions and answers in my direct, I thought, provided to me, when I reviewed it and was involved in it, some pretty compelling arguments that

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

18 Philip Morris was working very hard to try to address the
19 public health concerns that had been laid out over the last
20 35 years.
21 Q. Let's go to 417, please.
22 This is a Philip Morris report entitled smoking
23 and health significance of the report of the Surgeon
24 General's Committee to Philip Morris, Incorporated.
25 Go to the third page, please. This is dated

3727
1 February 18 of 1964. And this was done by Dr. Wakeham,
2 wasn't it?
3 A. Yes.
4 Q. All right, sir, and he says under his summary the
5 onus of proof has been moved by the report from its usual
6 position with the industries accusers to the tobacco
7 industry itself. Positive programs to cure ills cited in
8 this report, whether real or alleged, are recommended as
9 little basis for disputing the findings at this time has
10 appeared.
11 Did Philip Morris tell it's customers and the
12 public that there was little basis for disputing the
13 findings of the Surgeon General in 1964?
14 A. No, it did not.
15 Q. And in fact, it did just the opposite, didn't it?
16 A. I don't know. It could have. I was 11 years old at
17 the time.
18 Q. And you have not seen in your research of the
19 documents of Philip Morris then, about the publications
20 they put out and the information they put out about a
21 controversy in this area?
22 A. I made a mistake. I was 21 at the time.
23 Q. I wasn't going to call you on that.
24 A. Thank you.
25 Q. Let's go to Exhibit 553, please. This is dated

3728
1 October 25, 1966, project 600 regarding physiological
2 studies. And it was done by P. C. Luxinger.
3 Now he was a physician, wasn't he?
4 A. I do not know. He was long gone before I

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

came to the
company. I don't know what his background was.
Q. You are not aware of the contents of this report?
A. I have seen the contents but I was not aware of his
background.
Q. He was an individual that was asked to do some
outside research as opposed to having research done
in-house there at Philip Morris?
A. Possibly. I mean, I'm not that familiar with this
document.
Q. Turn to page 6, please. He makes a finding, does he
not, that available information from these studies
indicates that gross lung pathology can be induced by
smoking cigarettes.
What does that mean, gross lung pathology?
A. You have to refresh my memory, in terms of, is this
an animal study, a human study? I apologize, I just don't
recall.
Q. Quite all right.
It is my understanding that it was an animal
study, Dr. Carchman.
Let me withdraw the question if you are not

3729

familiar with it, okay?
A. Thank you.
Q. Let's move on to Exhibit 743, the cover letter by Dr.
Wakeham dated January 10, 1969 and it relates to smoking
and baby weight.
Are you aware of the fact that Philip Morris
was looking at the issues of what the effects were of
smoking were on pregnant woman?
A. I wasn't specifically aware of it but it doesn't
surprise me.
Q. Dr. Wakeham's cover letter says: Now we have a study
of the effect of smoking in pregnancy which supports
previous conclusions that smoking mothers produce smaller
babies. The position of the medical people is that smaller
babies suffer detriment effects all through life.
For example, in identical twins, the smaller
one at birth has lower intelligence test scores

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

at age 10.
Now this was information that Philip Morris had in 1969?
MR. LOMBARDI: Objection, under the rule of completeness, I ask the witness be shown the next page of the document.
MR. STRITMATTER: I'm going to go to it. I'll go to it now and then can the question.
Q. Going to the second page, as this is a report from R.

3730

Fagan to Dr. Wakeham of this study, paragraph 3, sub (a).
Mothers who smoked had a lower blood pressure than most who didn't smoke. Mothers who smoke have a higher percentage of unsuccessful pregnancies, paren, abortion, stillborn, and neonatal deaths, end paren.
And under sub (c). Non-smoking mother has a heavier baby than the mother who smokes.
And then the next page.
MR. LOMBARDI: Can we look at the "re" line of that page.
MR. STRITMATTER: Of which one?
MR. LOMBARDI: Of the one you were just on.
MR. STRITMATTER: I don't know what you mean.
Q. Yes, up at the top of the page, please. It refers to smoking and pregnancy, a prospective study done in Britain from the British Journal in 1968, correct?
A. Yes.
Q. And this was information then that Philip Morris secured with regard to what the effects were on pregnant women from smoking?
A. Publicly available probably a peer review medical article.
Q. And did Philip Morris do anything to notify it's customers with regard to what these effects were?
A. I'm not aware of the fact of whether they did or

3731

didn't.
Q. Going to the last page of the exhibit. It says the lower birth rate of babies born to smoking mothers is

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

attributed to the tobacco effects of smoke, particularly the carbon monoxide.

That goes back to the 1956 document that we started here, doesn't it, Dr. Carchman, and the effects of carbon monoxide and effects on people who smoke cigarettes?

A. That particular document I'm trying to remember is relating smoke to cardiovascular disease.

Q. It did, sir.

A. And so if I can make two points, both on this and the previous document, the '56 document you are referring to.

Q. Go ahead.

A. Both carbon dioxide and nicotine over the years have been implicated with a variety of adverse health effects for the cardiovascular system. Initially nicotine was felt to be playing a very important role. The public health community no longer accepts that.

Then that was followed by carbon monoxide in cardiovascular disease. The tobacco community doesn't accept that they have a new theory, a new idea about what in smoke is basically important, in terms of cardiovascular disease. And it's called something called

3732

free radicals. It's a special kind of chemical nobody knew about that way back then.

My point here, what was discussed in '56 was felt to be true in '56 is not true today.

With regard to smoking and low birth babies, this is an area that I have a particular interest in and one of great importance. I think the current data continues to support the notion that women who smoke have lower birth weight babies by a few grams. It's a small amount but I think it is a real and significant finding.

In here, where the discussion talks about carbon monoxide, I do not believe any scientist or public health official working in the area would accept this as anywhere near being the correct argument.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Again, it may have been true at the time as evidenced by what the medical community felt, it's no longer felt to be a true important causal factor in low birth weight babies.

Q. What is it that Philip Morris did to follow up on this study to do its own work with regard to this issue of how smoking was going to affect pregnant mothers?

A. I think when it comes to specifically looking at human beings and smoking and health, Philip Morris has deferred to the National Institutes of Health and other government agencies. When it comes to supporting basic

3733

research to get at mechanisms, wherever possible, Philip Morris either directly or indirectly has tried to support such research. This is a very complex and difficult area and I think only recently have disciplines such as what's called placental toxicology sort of risen up.

And there are a few experts in the world in this particular area. I agree, it is an important area, it's one that I'm interested in, I know the company is interested in, but I think given the scientific limitations we have done what I think was possible for us to do and that the health agencies have an ability to do much more than we could possibly ever do.

Q. How much money has Philip Morris spent on studying the issue of how smoking affects pregnant women and their babies?

A. I can't give you an answer to that question.

Q. Go to exhibit 952 please.

This is a December 8, 1970 document from Dr. Wakeham to will J. F. Cullman the III.

Was he President of the company at that time?

A. He was either President or CEO. He was a very high company official.

Q. And the subject is best program for CTR?

A. Yes.

Q. And looking at the highlighted portions, it says it

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

3734

has been stated that CTR has a program to find out, quote, "the truth about smoking and health," end quote. What is truth to one is false to another. CTR and the industry have publicly and frequently denied what others find as truth.

Now does that denial, does that relate to the controversy or the denial by Philip Morris and the tobacco industry that smoking causes disease?

A. I actually have looked at this document and a reading of the complete document. What Dr. Wakeham is offering up here is a menu of possible avenues that would be associated with support, continued support, or dissolution of CTR.

So this is just one of the -- if I remember correctly -- one of the things that he's talking about and the industry has publicly and frequently denied what others find as truth.

I mean, when I read this, I was somewhat startled and disturbed but Mr. Cullman is not a scientist, Dr. Wakeham is a scientist. So my being disturbed about it, there was nothing I could do at this point. This was a document that was prepared way before my time and in an environment I wasn't in. But there are some words in here that as they stand are somewhat disturbing. But I can't put them in context.

Q. Wouldn't you expect a scientist to be looking for the

3735

truth?

A. Yes. But he's talking to a non-scientist in a way trying to make that non-scientist understand something.

And I mean, to use the word "deny" is not -- to correctly analyze something you can accept or reject it, but denial is not a scientific term of art.

THE COURT: Let me just ask how much more do you have?

MR. STRITMATTER: I have quite a ways.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

THE COURT: We'll recess for the night. Put your pads face down.

Just to give you some idea of the schedule, and I'm wrong more times than I'm right, we'll go tomorrow and Thursday. I expect that you are probably going to get final arguments and instructions some time early next week. So to give you some idea now of how long after that it takes for deliberations or other matters, it is hard to envision. But it is my expectation that you will get it some time early next week. So you can get some sense for planning with your family. Okay.

Again, always, don't talk about the case; don't form any opinions or express any. You are going to be charged with deliberating on the evidence and much of the evidence is going to be by way of exhibits. You have seen some parts of the exhibits but you don't have the formal



exhibits yet, so until you have all the evidence and importantly until you have the instructions of the court to put that evidence in context, you are not to reach, form or express any conclusions.

Tomorrow morning ten 'til eight.

Again, we have had a long day today but I think we are moving through the case in fewer days because of that, and I think that is probably your desire as well as the court's. So we'll stand in adjournment until tomorrow.

(The jurors withdrew from the courtroom and the following proceedings were conducted in open court:)

MR. BERNICK: Can I deal with one issue on the record before we call it quits today.

THE COURT: You had something Mr. Weber.

MR. BERNICK: Thank you for giving me a minute or two on this. I want to revisit the court's ruling on the additive line of questioning and I want to explain

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001

why.
Remember you said you didn't think we needed that and there was some colloquy with the plaintiffs counsel in opening? Remember they said there were three issues: Additives, addiction, and youths. So we have had additives running through here --
MR. COUGHLIN: I never said that.

3737

MR. BERNICK: Yes, you did.
The way we split this case us up was Dr. Carchman would be dealing with this piece for all of us and there were a couple documents we need to get in industry wide testing on additives.
THE COURT: Do you have any objection to that exhibit? I didn't --
MR. COUGHLIN: I never made that argument. If it was typed wrong or said wrong.
MR. BERNICK: Otherwise I have to call Dr. Townsend back and put this in because this was what is what Dr. Carchman was going to do.
MR. COUGHLIN: I'll take a look at that.
THE COURT: Take a look at and then why don't we revisit it. If you use accept this and it's dealt with --
MR. LERMAN: To add two cents.
If there is going to be an argument in the case, which I think there is, that the companies didn't test the ingredients in the additives and no adequate testing was done on cigarettes to see if the additives changed their carcinogenicity or biological activity. If those arguments are going to be made by the plaintiffs, and I think they are, then this was the testimony that would directly address those issues.

3738

And we are now in a situation where we weren't able to put on our proof on that. If they say they are not going to make the argument, that's a different story.

http://legacy.library.ucsf.edu/tid/ow_05a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/hyxd0001

THE COURT: The witness did testify on that.
MR. COUGHLIN: He gave his opinion.
MR. LERMAN: He was going to address the specific issue of how we test and how we reach that conclusion. Right now all the jury has is Carchman saying in my judgment it is safe.
There is a whole testing procedure and process that's gone through that was the gist of the testimony that was coming. And what I've heard from the plaintiffs during the trial is that we don't do that testing and I think this jury is thinking there are ingredients that go in untested into the cigarettes. And they don't have any clue now as to what the protocol is. And I don't think it's cured by simply having him say oh, I think they are safe.
THE COURT: I have not understood that the additives to be the issue, in terms of the toxicity of the cigarette.
MR. LERMAN: I don't want to put words in Mr. Coughlin's mouth.
MR. COUGHLIN: No, there has been testimony that they don't adequately test.

3739

THE COURT: Just generally isn't it --
MR. LERMAN: On additives, judge --
MR. COUGHLIN: Farone testified on that.
THE COURT: Maybe in redirect he'll get to some more, and if you need to recross you can recross. I just thought it was going over an awful lot of time at the end of a long day on something that really had not been a subject of of dispute.
MR. WEBER: If we can reorganize that and shorten it.
THE COURT: Try to shorten it if you can.
There have been defendant's motion for guidance for scheduling witnesses in document number 765. And it dealt with whether or not Donald Reuben would be

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

called in
the first part of the case or the second part.
I've reviewed his expert report again, and at
least the way it appears to me now, he goes more towards
the second. I think almost all expert reports he writes
in criticism of the methodology used by Harris in
calculating the damages. So unless there is some kind of
area that's shown to have relevance in this first part, I
think he's more properly received in the second.
MR. WEBER: Well, judge, I believe most of what
he does is for the second part. And I think the reason we
came to you is because of the way they put Dr. Harris on

3740

where he spent that time talking about the attributable
risk formula, which he spent a lot of time on, and we
think Dr. Reuben can come in and challenge that testimony.
THE COURT: I think he can, but it's more if he
wants to come in. I just think that it, I tried to keep
the plaintiffs, their testimony on that attributable risk.
MR. WEBER: General.
THE COURT: Very general.
MR. WEBER: But don't we have a right to meet
them generally on that and just say, in general, there are
flaws with that approach. That's what we want Dr. Reuben
to do because we, quite frankly, didn't think Dr. Harris
what going to do that in phase one either?
THE COURT: Unless the testimony is to the
effect that Harris's testimony, that it's his opinion that
there is no damages.
MR. WEBER: Well, he's not going to talk, I
think, about damages. He's going to talk about that
attributable risk formula and the flaws with it.
THE COURT: Let me just, I would indicate I
think it's the broad, broad majority of his in fact would
say I haven't found anything in his expert report that
goes to the first part of the trial. I think everything

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

I've found goes to the second part.
And it's certainly admissible at that part, if

3741

we ever get there, but I think his testimony is not properly received in the first part.
Now, I don't mean to say that you can't proffer some evidence that may not be admissible. But in looking at his report, it seems to be exclusively dealing with the amount of damages and the flaws in the plaintiff's claim that there is any damages.
MR. WEBER: I think it was all bundled together, I agree. But now they came in and put a piece of it in in this phase going through the statistics on attributable risk, and all I'm saying now, judge, we have got to be able to meet that.
MR. COUGHLIN: Your Honor, I just don't think that's true. I mean, they kept point in saying there is no connection to the trust funds, no connection to the trust funds, and we had to prove causation. But we didn't go to into the model, it was very general. You limited us before we got started with Dr. Harris, and I don't think there is any reason to put that in here or we would have to bring Dr. Harris back in this phase, too.
THE COURT: It almost appeared to me that his opinion goes only to a degree against Harris, it goes more against DeMeant.
MR. BERNICK: If I could just take a try.
Harris came in and he didn't put in the model

3742

results, but he described the methodology that he applied in the model. He gave, essentially in his report it was all bundled together. He said here's the model and I apply it to reach a calculation. And he does a calculation. He came into testify and skimmed off from his report the general framework and then offered generalized testimony.
When Reuben submitted his report he

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

responded
to what was actually in Harris's report, which was the
whole ball of wax. All we want to do is bring Reuben in
to do exactly the same thing Harris did, which is to skim
off that general layer. It may not be styled that way in
his report, neither was it styled that way in Dr. Harris's
report, so we are left in a situation where Harris has
been able to take, in a sense, a part of the report and
can lay it out there on this very, very important issue?
And then we are essentially forclosed from any kind of
response.
THE COURT: What do you envision him testifying
to.
MR. BERNICK: I envision him testifying to
properly apply any kind of methodology using attributable
risk as Harris has done. You need to go through certain
steps in that process and that Harris's methodology does
not go through those steps. As a methodology it is

3743
incorrect, separate and apart from any particular
calculation.
MR. WEBER: Same level of generality.
MR. BERNICK: That is the essence of what he
has to say. And Harris, I give them credit, I think they
did something that was very smart. Because they avoid the
damage calculation but they give the credibility and
essence of what it will be. And that's really what we
have to respond to. And if we don't do it we are really
naked on that, to be candid with the court.
MR. WITHEY: Can I address this?
But since I put both these individuals on, your
instincts are correct.
Dr. Harris has not testified he created this
damage mold or applied it. Dr. Demeant did, and so did
Stan Roberts. They designated two experts that have
statistical background to attack this issue. One was Dr.

http://legacy.library.ucsf.edu/tid/owv35a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

Wecker, and the other was Dr. Reuben.
They designated Dr. Reuben for the second stage and they designated Dr. Wecker for the first. And the issue wasn't whether there was a damage model, that's for the second stage. The issue was, was it possible to figure out how much the smoking attributable fraction that's in Dr. Harris's report, only as the fact that he wrote chapter 3, it's not in his report that I applied

3744

this attributable formula to these trust funds. He didn't do that, someone else did. He didn't do that.
And Dr. Reuben didn't attack him on that, he attacked him on the quantification of it.
The other thing with Dr. Harris, we drew the line saying he's not going to talk about damage models or is he going to talk about causation models. Most of what Dr. Reuben's is on is the causation model and P's and K's and Q's and as and R's. It would be unfair, we wouldn't be prepared.
MR. WEBER: My point, quite quickly to wrap it up. They had a witness come in and it was found relevant in this phase, for whatever reason, for him to talk about attributable risks. If they can do it, we have got to be able to do it. That's the simple bottom line from our perspective.
THE COURT: Except his report doesn't talk about --
MR. WEBER: Because he talked about Harris's model. Harris report didn't look anything at all like that testimony.
I ask the court to look at the Harris report, it is totally foreign to what he testified to here.
MR. BERNICK: The only other thing I would add, we are talking about the fact of injury, not the amount of

3745

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccoindustrydocuments.ucsf.edu/docs/hyxd0001

damage, but the fact of injury. A person in Harris's position with his background and discipline, gets to the question of his -- is the defendant's conduct a significant factor, the fact of injury, by doing a statistical analysis?

If you take a look at this '89 Surgeon General's report it takes basically a similar kind of approach. He was able to testify to the fact of injury by kind of laying out some of the basic moves that he made in his statistical analysis without giving the details.

But the testimony was: I applied a methodology as a econamatrition to be able to say a significant contributing factor. That's a term of meaning to Dr. Harris. His report does that whole analysis to determine significant contributing factors.

All we want to say as a statistical matter, you cannot make the statements as he did from the stand, significant contribution factors, unless you go through steps. Indeed one of the jurors asked the question about the steps of the methodology. That's obviously on their minds.

THE COURT: I'm still not relying on his report. Maybe there is a misunderstanding. I am not at this point in time -- I would say that he's not properly received at this time. But I don't mean to suggest that

3746

if it ever gets to the second part which deals with whether there is damages, that he would not be able to come in and say that there is no damages proven.

MR. BERNICK: But if the jury determines in phase one, if the question gets put to them: Was the defendants conduct a significant factor, that is, was there the fact of injury? Are we going to be permitted to litigate in phase 2 whether that is true or not; or whether it be a determined fact from phase 1?

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

10 THE COURT: I don't think you have, at that
11 point in time, you would be able to argue whether any
12 damages have been proven.
13 MR. BERNICK: I'm sorry, I think --
14 THE COURT: I think you would be able to argue
15 whether any damages have been proven.
16 MR. BERNICK: It gets --
17 THE COURT: Proximate cause damages to the
18 plaintiff, I guess is the way the first portion would go.
19 It's just the problem is, that his report all
20 goes to the measure of damages, and I don't know of any
21 supplement from him that deals with something that would
22 be relevant in the first portion.
23 MR. WEBER: It's just that since Harris
24 testified last week with the way he whittled down
25 attributable risk he never gave us a report. My testimony

3747
1 is just about this. We never dealt with that separately,
2 we dealt it as a big piece, and if we don't have Wecker
3 and Reuben on, it's close to directing us on that, because
4 he's testified on an issue and we have nothing to say.
5 That's a key issue. He spent a lot of time on
6 it in his direct on attributable risk, and if we don't
7 have one of these guys to say what he said was wrong or
8 there are better ways to look at it.
9 MR. WITHEY: He wrote chapter 3.
10 MR. WEBER: What if we gave a proffer on that
11 about the general outlines that he would say.
12 THE COURT: I'll take a look at it but I
13 don't -- you know, at least at the point where he's at
14 now, I think he's more properly received in the second
15 portion and he doesn't really counter the testimony in the
16 first.
17 Let's just quickly go to a second issue. What
18 about Wecker? Because I have a motion I haven't had time
19 to read in the trial, asking for a reconsideration as to
20 him. What happened? Was he examined by

http://legacy.library.ucsf.edu/tid/owv95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

deposition?
MR. WITHEY: Yes.
MR. WEBER: He was deposed Saturday was it.
MR. WITHEY: Yes it was on his critique of the damage model and he will assume testify in the second stage. We went through I could explain what the

3748

deposition is about.
THE COURT: Paraphrase for me what the argument is on the motion for reconsideration.
MR. WEBER: The argument on the motion for reconsideration is I think with all respect, the court missed it on the first one. I think Dr. Wecker, you know Dr. Wecker just went through a situation where he almost died. We had an agreement with the plaintiffs that they would get his supplemental report a week before his deposition. That was the agreement, that was the agreement we all had on these damage experts.
We gave them the report a week before the deposition so we were timely on that. This is a guy who, as I said, was in ICU almost dropped dead with this internal bleeding they couldn't diagnose. That's our argument.
THE COURT: My recollection it has been some time and I've made the ruling on the materials before me but my recollection had been that he was late in getting in his report and then not be available for deposition until we got to the trial.
MR. WITHEY: That's correct.
MR. WEBER: He almost died.
MR. WITHEY: And your Honor, he had not provided the computer -- we established in the

3749

deposition -- the computer output until Saturday or not until about three days before Saturday. So it was a total surprise.
THE COURT: When did you take his deposition?
MR. WITHEY: This Saturday. I mean, we got --

http://legacy.library.ucsf.edu/tid/ovw95a00/pdf Source: www.tobaccodocuments.ucsf.edu/docs/hyxd0001

we should have had the computer output, which was available. He testified it was available, he could have given it to us on November 6th.

THE COURT: I don't know if you have responded.

Have you seen their motion?

MR. WITHEY: I just saw it, yes, I could respond tonight or tomorrow, if it need be.

MR. WEBER: That is a phase 1 issue too.

THE COURT: Were you intending to call him in phase 1.

MR. WEBER: Yes. And we had told them that.

THE COURT: Well, you better get a response in by the morning.

MR. WITHEY: We were waiting to get the deposition so we could cite the deposition of what was not provided to us, your Honor.

THE COURT: You better get a response in the morning.

MR. WITHEY: Thank you, your Honor.

MR. WEBER: Thanks, judge.

3750

- - -

(The hearing was adjourned at 5:30 p.m., Tuesday, March 9, 1999 until 8:00 a.m. Wednesday, March 10, 1999, at which time the following proceedings were conducted in open court.)

- - -

C E R T I F I C A T E

I, Richard G. DelMonico, Official Court Reporter in and for the United States District Court, for the Northern District of Ohio, Eastern Division, do hereby certify that the foregoing is a true and correct transcript of the proceedings herein.

_____

Richard G. DelMonico,
Official Court Reporter
404 U.S. Courthouse
Two South Main Street
Akron, Ohio 44308
(330) 535-2280

http://legacy.library.ucsf.edu/tid/owv05a00/pdf Source: www.industrydocuments.ucsf.edu/docs/hyxd0001